DIVERGENCE ACADEMY

Catalog

Version #11

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Mission Statement

Divergence Academy is an institution for students who are either building on their enthusiasm for tools and technologies in IT or for those who have emerging enthusiasm seeking to find their pathway into IT.

Our mission is to empower our students to become life-long learners and explorers on a path of continued opportunities. We are committed to assisting students in achieving their goal of first steps or next steps in a fulfilling and life-changing career.

History

The Divergence Academy was started in 2015 in Addison, Texas by Sangeeta Ankaraju and Sravan Ankaraju. The Divergence Academy is **Approved and Regulated by the Texas Workforce Commission, Career Schools and Colleges, Austin, Texas**.

Non-Discrimination Policy

Divergence Academy is non-sectarian and does not discriminate with regard to race, creed, color, national origin, age, sex, disability, or marital status in any of its academic program activities, employment practices, or admissions policies.

This policy applies to hiring of all positions and admission of all students into all programs. Students with special needs such as physical or mental handicaps or learning disabilities are considered for admission, provided they meet entrance requirements. The Chief Academic Officer is responsible for accepting students and determining whether applicants, including those with special needs, can benefit from the training.

Facilities

The main Divergence Academy campus located at 14665 Midway Road Ste. 220 Addison, TX 75001 between Belt Line Rd and Spring Valley Rd, one mile east of the Dallas North Tollway. The area of the school is approximately 9394 sq. ft. with a front entrance and back entrance. This space is divided into a reception area, one large conference room, offices, and multiple classrooms. Restrooms are available. Student and faculty lounge areas are available for relaxation purposes. The facilities have adequate lighting and are temperature controlled and wheelchair accessibility. Free ample student parking (including handicapped) is available around the building. Students can receive instruction on school owned equipment, hardware, and software or can bring in their own laptop and connect to the school's online services. The facility and equipment used fully comply with all federal, state, and local ordinances and

regulations, including requirements for fire safety, building safety, handicapped access, and health.

Due to pandemic precautions, Divergence Academy is currently authorized to provide live, remote delivery of its programs. Students choose whether they want to attend classes onsite or remotely, however instruction and engagement is delivered online. Instructor may or may not be onsite.

Office hours are 8:30 AM to 6:00 PM Monday through Friday, except for the days school will be closed.

COURSES OFFERED

Data Science Immersive (Program)

Subject hours: 400 hours (Immersive, Full-time, or Part-time, On-campus)

Learning from data to gain useful predictions and insights. Key facets of an investigation: data wrangling, cleaning, and sampling to get a suitable data set; data management; exploratory data analysis; prediction based on statistical methods such as regression and classification; and communication of results through visualization.

Number	Module	Hours	Lecture	Lab
DSI-01	Modeling for Insights	160	80	80
DSI-02	Modeling for Predication	120	60	60
DSI-03	Scaling for Analytics	80	40	40
DSI-04	Project Capstone	40		40
TOTAL		**400**	180	220

Module 1: Modeling for Insights
Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Optional pre-work (there is no additional charge for pre-work)
Subject Description: Get acquainted to Modeling for insights through a well-rounded technical foundation which includes hands-on Structured Query Language labs, and then Model data using Data Analysis Expressions (DAX) using real-world examples that helps look at the reports in a different way i.e., with the correct model, the correct answer is always a simple one!

Module 2: Modeling for Prediction
Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Module 1: Modeling for Insights
Subject Description: Automation with Machine Learning is the significant aspect of this module. Explore the data to generate hypotheses and intuition and communicate results through Analyzing and Visualizing data with Power BI, Data Shaping through Power Query, and Enterprise Business Process Automate using Power Platform and Azure Cognitive AI.

Module 3: Scaling for Analytics
Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Module 2: Modeling for Prediction

Subject Description: Scaling Analytics through the Auto ML - apply regression and classification techniques to power business forecasts and drive decision-making and strategy, Data Engineering through transfer of Power Query and M-Language skills into Azure Data Factory (ADF) and build skills to troubleshoot underperforming queries and drifting Machine Learning models.

Module 4: Project Capstone
Subject Hours: 40 hours (40 lab hours)
Prerequisites: Module 3: Scaling for Analytics
Subject Description: This module serves as the capstone for the 9 weeks of learning through integration of Data Science skills through a project focused on real-world open data. The learner may choose to work alone but preferably in a group of 2-3. In addition, support from staff is provided to tailor the data science process steps to develop a minimum viable data product. A learner is assessed on their problem hypothesis, statistical model, insights delivered through use of the model, flexibility of the model. The goal of this this module is to help a learner to develop an effective LinkedIn Profile, showcase project portfolio, prepare for interviews by revisiting their capstone problem, and share capstone project results.

Data Science Immersive Remote (Program)

Subject hours: 400 hours (Immersive, Full-time, or Part-time, Online)

Learning from data to gain useful predictions and insights. Key facets of an investigation: data wrangling, cleaning, and sampling to get a suitable data set; data management; exploratory data analysis; prediction based on statistical methods such as regression and classification; and communication of results through visualization.

Number	Module	Hours	Lecture	Lab
DSI-01	Modeling for Insights	160	80	80
DSI-02	Modeling for Predication	120	60	60
DSI-03	Scaling for Analytics	80	40	40
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Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Module 1: Modeling for Insights
Subject Description: Automation with Machine Learning is the significant aspect of this module. Explore the data to generate hypotheses and intuition and communicate results through Analyzing and Visualizing data with Power BI, Data Shaping through Power Query, and Enterprise Business Process Automate using Power Platform and Azure Cognitive AI.

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Module 4: Project Capstone
Subject Hours: 40 hours (40 lab hours)
Prerequisites: Module 3: Scaling for Analytics
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Cybersecurity Professional Penetration Tester (Program)

Subject hours: 400 hours (Immersive, Full-time, or Part-time, On-campus)

Focusing specifically on the knowledge and skills needed by a professional looking to lead or take part in a penetration test. We drill down into the latest technical knowledge, tools and techniques in key areas including Infrastructure, Web Application and Mobile security as well as Social Engineering.

Number	Module	Hours	Lecture	Lab
CPPT-01	Virtualization & Cloud	120	60	60
CPPT-02	Wired and Wireless Networking	120	40	80
CPPT-03	Security and Pentesing	160	60	100
TOTAL		**400**	160	240

Module 1: Virtualization and Cloud
Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Optional pre-work (there is no additional charge for pre-work)
Subject Description: Get acquainted with Server architecture, storage, security, networking, troubleshooting, disaster recovery. Move the components of the server infrastructure into the Cloud via virtualization, additional security, deployment, operations and automation.

Module 2: Wired and Wireless Networking
Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Module 1: Virtualization and Cloud
Subject Description: Learn Information Technology network foundations to work better with security practitioners. This module covers newer hardware, cloud computing best practices, service models, and hands-on troubleshooting of small, medium, and large simulated networks for network resiliency.

Module 3: Security and Pentesting
Subject Hours: 160 hours (60 lecture hours, 100 lab hours)
Prerequisites: Module 2: Wired and Wireless Networking
Subject Description: Install and configure systems to secure applications, networks, and devices; perform threat analysis and respond with appropriate mitigation techniques; participate in risk mitigation activities; and operate with an awareness of applicable policies,

laws, and regulations. In addition - plan and scope an assessment, understand legal and compliance requirements, perform vulnerability scanning and penetration testing, analyze data, and effectively report and communicate results.

Cybersecurity Professional Penetration Tester Remote (Program)

Subject hours: 400 hours (Immersive, Full-time, or Part-time, Online)

Focusing specifically on the knowledge and skills needed by a professional looking to lead or take part in a penetration test. We drill down into the latest technical knowledge, tools and techniques in key areas including Infrastructure, Web Application and Mobile security as well as Social Engineering.

Number	Module	Hours	Lecture	Lab
CPPT-01	Virtualization & Cloud	120	60	60
CPPT-02	Wired and Wireless Networking	120	40	80
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Cybersecurity Core Technical (Program)

Subject hours: 400 hours (Immersive, Full-time, or Part-time, On-campus)

Combines security and cloud fundamentals with DevOps to meet the growing demand for IoT security. The course will take you from the concept of IoT to building 'things' that make up the Internet of Things, including how those components are securely connected together, how they communicate, and how they value add to the data generated. The fundamental aspect of IoT security is data security.

Number	Module	Hours	Lecture	Lab
CCT-01	Secure Infrastructure	160	80	80
CCT-02	Secure DevOps	120	60	60
CCT-03	Secure IoT	160	60	100
TOTAL		**400**	200	200

Module 1: Secure Infrastructure
Subject Hours: 160 hours (60 lecture hours, 100 lab hours)
Prerequisites: Optional pre-work (there is no additional charge for pre-work)
Subject Description: Prepare to apply the Linux and Cloud administration skills towards implementing, managing, and monitoring identity, governance, storage, compute, and virtual networks in a cloud environment, plus provision, size, monitor, adjust resources through automation with scripting – PowerShell, Bash and Command Line Interface (CLI).

Module 2: Secure DevOps
Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Module 1: Secure Infrastructure
Subject Description: This module is designed to provide an entry level understanding of common DevSecOps practices, processes, and tools. You will learn how to support the DevSecOps transformation and increase security capabilities without the need for gating processes. Explore frameworks, tools, and technologies to secure code from blueprint to execution which include Accounts and access, Teams and integrations, Projects and monitoring

Module 3: Secure IoT
Subject Hours: 120 hours (40 lecture hours, 80 lab hours)
Prerequisites: Module 2: Secure DevOps
Subject Description: Learn the responsibilities of IoT developer through hands-on implementation and the just-enough coding required to create and maintain the cloud and the edge portion of an IoT solutions. In addition to configuring and maintaining the devices by using cloud services, the IoT Developer also sets up the physical devices, maintains the devices throughout the life cycle including security via device authentication in the IoT Hub, generating and managing the certificates.

Cybersecurity Core Technical Remote (Program)

Subject hours: 400 hours (Immersive, Full-time, or Part-time, Online)

Combines security and cloud fundamentals with DevOps to meet the growing demand for IoT security. The course will take you from the concept of IoT to building 'things' that make up the Internet of Things, including how those components are securely connected together, how they communicate, and how they value add to the data generated. The fundamental aspect of IoT security is data security.

Number	Module	Hours	Lecture	Lab
CCT-01	Secure Infrastructure	160	80	80
CCT-02	Secure DevOps	120	60	60
CCT-03	Secure IoT	160	60	100
TOTAL		**400**	200	200

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Cybersecurity Risk Management (Program)

Subject hours: 400 hours (Immersive, Full-time, or Part-time, On-campus)

Cybersecurity Risk Management (CRM) is Vocational Pathway Program focused on job skills in NICE Cybersecurity Workforce Framework (NCWF) OVERSEE AND GOVERN, COLLECT & OPERATE, AND ANALYZE areas. The primary goal is to build tools, techniques, process and procedures in an organization with a thorough understanding of contemporary Zero-Trust principles of security.

Number	Module	Hours	Lecture	Lab
CRM-01	Manage Information Systems Security	160	80	80
CRM-02	Monitor Zero-Trust Systems	120	60	60
CRM-03	Manage CMMC Compliance	40	20	20
CRM-4	Perform Assessment Capstone	80	0	80
TOTAL		**400**	160	240

Module 1: Manage Information Systems Security
Subject Hours: 160 hours (80 lecture hours, 80 lab hours)
Prerequisites: Optional pre-work (there is no additional charge for pre-work)
Subject Description: Learn the management of domains in the Information Systems security which include Security and Risk Management, Asset Security, Security Architecture and Engineering, Communication and Network Security, Identity and Access Management, Security Assessment and Testing, Security Operations, and Software Development Security.

Module 2: Monitor Zero-Trust Systems
Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Module 1: Manage Information Security Systems
Subject Description: Explore the principles of Zero Trust – Verify explicitly, Use least privileged access, and Assume breach. Apply the principles through hands-on use cases and technology labs using modern cloud-enabled Security Incident and Event Management (SIEM), and Security Orchestration, Automation and Response (SOAR) platforms. Contemporary security operations teams use both SIEM and SOAR to optimize the Security Operations Center.

Module 3: Manage CMMC Compliance
Subject Hours: 40 hours (20 lecture hours, 20 lab hours)
Prerequisites: Module 2: Monitor Zero-Trust Systems
Subject Description: The Cybersecurity Maturity Model Certification (CMMC) is a unified standard for implementing cybersecurity across the defense industrial base (DIB), which includes over 300,000 companies in the supply chain. The CMMC is the DoD's response to significant compromises of sensitive defense information located on contractors' information systems. Prepare through theory and hands-on use cases to Manage the risk with Federal

Supply Chain, ensure compliance through implementing and evaluating CMMC Level 1-5, and Prepare an organization for an Assessment.

Module 4: Perform Assessment Capstone
Subject Hours: 80 hours (80 lab hours)
Prerequisites: Module 3: Manage CMMC Compliance
Subject Description: This module serves as the capstone for the 8 weeks of learning through integration of management techniques into an organization assessment. The assessment will include Information systems risk, Zero-Trust posture, and application of CMMC. The goal of this this module is to help a learner to develop an effective LinkedIn Profile, showcase project portfolio, prepare for interviews by revisiting their capstone problem, and share capstone project results.

Cybersecurity Risk Management Remote (Program)

Subject hours: 400 hours (Immersive, Full-time, or Part-time, Online)

Cybersecurity Risk Management (CRM) is Vocational Pathway Program focused on job skills in NICE Cybersecurity Workforce Framework (NCWF) OVERSEE AND GOVERN, COLLECT & OPERATE, AND ANALYZE areas. The primary goal is to build tools, techniques, process and procedures in an organization with a thorough understanding of contemporary Zero-Trust principles of security.

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CRM-02	Monitor Zero-Trust Systems	120	60	60
CRM-03	Manage CMMC Compliance	40	20	20
CRM-4	Perform Assessment Capstone	80	0	80
TOTAL		**400**	160	240

Module 1: Manage Information Systems Security
Subject Hours: 160 hours (80 lecture hours, 80 lab hours)
Prerequisites: Optional pre-work (there is no additional charge for pre-work)

Subject Description: Learn the management of domains in the Information Systems security which include Security and Risk Management, Asset Security, Security Architecture and Engineering, Communication and Network Security, Identity and Access Management, Security Assessment and Testing, Security Operations, and Software Development Security.

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Subject Hours: 120 hours (60 lecture hours, 60 lab hours)
Prerequisites: Module 1: Manage Information Security Systems
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Python for Data Analysis (Seminar)

Duration**:** 40 hours

Overview

The goal of this 5-day seminar is to introduce data analysis with the Python programming language and is aimed at beginners. We introduce how to work with different data structures in Python. We cover the most popular modules including Numpy, Scipy, pandas, Matplotlib, seaborn, and ggplot for data analytics and visualization.

What you'll learn

- **Introduction to Python**: Basic objects in Python, Variables and self-defining functions, Control flow, Advanced data structures
- **Deep dive with Python**: Object-oriented programming, deal with files, run Python scripts, and handle and process strings
- **Scientific computation tools** – Understand and apply three modules for scientific computation that make Python as powerful as Matlab: Numpy, Matplotlib and Scipy.
- **Data Visualization** - Generate graphics by using appropriate tools like **Seaborn** and **Plotly**.
- **Data manipulation with Pandas** - Understand and apply provides rich data structures and functions designed to make working with structured data fast, easy, and expressive.

Data Science (Seminar)

Duration: 60 hours

Overview

The 6-week intermediate level data science course is a practical introduction to the interdisciplinary field of data science and machine learning, which is at the intersection of computer science, statistics, and business. You will learn to use the programming languages, tools, and technologies to help you acquire, clean, parse, and filter your data.

A significant portion of the course will be a hands-on approach to the fundamental modeling techniques and machine learning algorithms that enable you to build robust predictive models about real-world data and test their validity. You will also gain practice communicating your results and insights about how to build systems that are more intelligent using the data that you have gathered. One such system is Recommendation System.

Recommender systems are used to predict the best products to offer to customers. These systems have become extremely popular in virtually every single industry, helping customers find products they'll like. Most people are familiar with the idea, but nearly everyone is exposed to several forms of personalized offers and recommendations each day (Google search ads being among the biggest source).

Building recommendation systems is part science, part art, and many have become extremely sophisticated. Such a system might seem daunting for those uninitiated, but it's actually fairly straight forward to get started if you're using the right tools and techniques.

What you'll learn

- **Data Science Foundations & Exploratory Data Analysis:** Build on Descriptive Statistics, Probability Theory, and explore distributions using charts.
- **Machine Learning, Bias-Variance and Model Evaluation:** Model selection and diagnostics.
- **Web Scraping, Regression and Classification:** Gather data from internet sources, and stat with building classical regression and classification models.
- **Naïve Bayes, Natural Language Processing:** Modeling with Naïve Bayes classifiers, social media data collection and storage, and sentiment analysis.
- **Decision Trees and Ensembles, Clustering:** Supervised learning beyond classical models and Unsupervised learning with K-means.
- **Big Data Analytics:** Scaling data analysis with large datasets on Spark and Hadoop Map-Reduce.

By the end of this course students will be able to:

- ✓ acquire, clean, and parse large sets of data using Python,
- ✓ choose the appropriate modeling technique to apply to your data,
- ✓ programmatically create predictive data models using machine learning techniques,
- ✓ apply probability and statistics concepts to create and validate predictions about your data, and
- ✓ communicate your results to an appropriate audience.

Data Science Adaptive (Seminar)

Duration: 105 hours

Overview

Adaptive course provides students option to select one of the listed modules to participate and engage through project-based learning. Each module teaches you how to complete up to three Machine Learning projects through application of Supervised and Unsupervised Learning techniques. You will learn how to apply Machine Learning algorithms to real-world applications from examples including Amazon Movies, City Bike sharing, Airline Flight Delays, Yelp Restaurant reviews, and Datasets from Kaggle Competitions. This intermediate to advanced course is designed specifically for working professionals that have hands-on software development experience using programming languages such as Python and SQL and are looking to apply the contemporary predictive modeling techniques.

What you'll learn

- MODULE 1: DATA SCIENCE FOUNDATIONS
    - SOFTWARE ENGINEERING AND EXPLORATORY DATA ANALYSIS: Master cleanup of datasets using Python and SQL, exploratory data analysis to generate hypotheses and intuition, and communication of results through visualization, stories, and summaries
    - Modeling FOR Inference: Develop approaches to performing inference, and acceptance of results; master concepts in causal inference and motivate the need for experiments; apply statistical tools to help plan experiments: exploratory analysis, apply statistical methods to estimate causal quantities of interest and construct appropriate confidence intervals.

- MODULE 2: MACHINE LEARNING
    - SUPERVISED LEARNING: Develop a modeling lifecycle – from specification, fit, and accuracy thru reliability; apply feature selection methods, finding "optimal" model parameters based on data; master Linear Regression - Bias-variance Tradeoff, and Logistic Regression including multiclass modeling.
    - NATURAL LANGUAGE PROCESSING: Apply visualization of model performance under various kinds of uncertainty; further consideration of what is desired from data mining results using Decision Trees, Random Forests, and Ensembles; Implement Natural Language Processing (NLP) processes into projects and software applications; Programmatically extract data stored in common formats; critically assess options for cleaning data in different contexts; store, retrieve, and analyze data using NoSQL databases
    - Unsupervised Learning: Apply feature selection methods such as – Filtering and wrapping algorithms; master unsupervised methods in predictive analytics, in network and text analytics; apply Dimension reduction of predictor space and Graphing analysis algorithms for clustering (community detection in graph networks)

- MODULE 3: SCALING FOR ANALYTICS
    - DATA ENGINEERING: Use Hadoop ecosystem for Pre-processing; and then apply Exploratory Data Analysis and Predictive Modeling; develop Mappers, Reducers and jobs using Hive, SQOOP, and PIG scripting; master Hadoop data workflows and jobs with Python; read and write data to HDFS; and apply the next generation framework i.e. Spark (in-memory), for Filtering, Aggregating and Searching.

- MACHINE LEARNING CASE STUDIES: Implement recommenders from scratch and use software libraries and tools to implement more advanced recommenders; develop REST API for predictive models; deploy models into production using various methods including Predictive Modeling Markup Language (PMML), develop web applications that consume predictive models, understand Platform-as-a-service offerings to deploy web applications, review additional uses cases such as Anomaly Detection, Customer Churn, and Time series Forecasting.

By the end of this course students will be able to:

- ✓ acquire, clean, and parse large sets of data using Python,
- ✓ choose the appropriate modeling technique to apply to your data,
- ✓ programmatically create predictive data models using machine learning techniques,
- ✓ apply probability and statistics concepts to create and validate predictions about your data, and
- ✓ communicate your results to an appropriate audience.

Applied Big Data Analytics (Seminar)

Duration: 40 hours

Overview

This course is for software engineers, data analysts, business analysts, technical program managers, architects, database administrators, and researchers with an interest in data science and big data engineering. The format of the course is 50% lectures and 50% labs with exercises. This course is a practical introduction to the interdisciplinary field of data science and machine learning, which is at the intersection of computer science, statistics, and business.

A significant portion of the course will be a hands-on approach to the fundamental modeling techniques and machine learning algorithms that enable you to build robust predictive models. You will learn to use the Python programming language, AWS and Azure Machine Learning tools, and technologies to help you apply machine learning techniques to practical real-world problems. The two in-class projects with Kaggle capstone and IoT streaming will crystallize the concepts learned in the course.

What you'll learn

- **Data Exploration and Visualization**: The first and most important task of the data scientist is to understand their data. The bulk of our first day is dedicated to the theory and practice of understanding data. Through a series of interactive, hands-on exercises, we teach you how to dissect and explore data, engineer your features, and clean your

data to prepare it for modeling. You will learn not just the mechanics of data exploration, but also the proper mindset, one that will help you tease out the patterns hidden in your data.

- **Introduction to Predictive Analytics and Classification**: Our first foray into predictive analytics is guided by a deep dive into the mechanics and theory behind decision tree models. The basis of some of the most successful predictive models, decision trees provide a useful vehicle for hands-on exercises in training and testing classification models in Python.
- **Evaluation of Predictive Models**: One of the subtlest and trickiest areas of modern data science is in model evaluation. The risk of "overfitting" and producing a model that generalizes very poorly constantly hangs over the practitioner's head. We teach you about the metrics and methods you can use to protect yourself from this danger, giving you direct, practical experience in how to tune your models for greatest effectiveness. We'll familiarize you with the evaluation and model tuning capabilities of Python.
- **Ensemble Methods**: Two models working in concert are better than one. That's the fundamental principle underlying one of the most important modern advances in machine learning, ensembles. We take you through the underlying theory, explaining why ensembles outperform single models, as well as pointing out the most common pitfalls and dangers. We cover both bagging and boosting strategies for constructing ensembles, using random forests and AdaBoost as concrete examples. You'll build and tune multiple kinds of ensemble methods for yourself, in Python.
- **Deploying Machine Learning Models**: The best model in the world is useless if you can't get new data to it. Azure and Amazon Machine Learning both provide direct and simple processes for setting up real-time prediction endpoints in the cloud, allowing you to access your trained model from anywhere in the world. We walk you through constructing your own endpoints and show a few practical demos of how this can be used to expose a predictive model to anyone you'd like to use it.
- **Parameter Tuning**: Modern machine learning algorithms are designed to work well "out of the box", but the default settings are rarely the truly optimal ones. We teach you to understand the effects of each algorithm's configuration parameters, and to use this knowledge to tune your models for optimal performance.
- **Introduction to Regression**: Regression and classification are the two sides of the supervised learning coin. You will learn how to adapt the techniques you have learned to the challenge of predicting prices, revenues, click rates, and more. We give you an overview of how regression models learn, teach you how to evaluate them, and demonstrate the use of regularization to prevent overfitting. We end with hands-on exercises in Python.
- **Text Analytics**: Many applications of data science require analysis of unstructured data. We will teach you the basics of converting text into structured data, showing you how to avoid some of the most common pitfalls.
- **Fundamentals of Big Data Engineering**: The first challenge of big data isn't one of analysis, but rather of volume and velocity. How do you process terabytes of data in a reliable, relatively rapid way? We teach you the basics of MapReduce and HDFS, the

technologies which underlie Hadoop, the most popular distributed computing platform. We also introduce you to Spark, the next wave of distributed analysis platforms.

- **A/B Testing & Online Experimentation**: Online experimentation is perhaps the most misused of data science techniques. We will walk through the best practices for designing and evaluating A/B and multi-variate tests. We discuss how to choose the appropriate metrics, how to detect and avoid errors, and how to properly interpret test results.
- **Kaggle Capstone**: You've been learning the knowledge and skills of data science for 3 days. Now it's time to put those new skills to the test with a real problem. Kaggle's Bike Sharing Demand prediction competition is the perfect testing ground to cut your teeth on.
- **Event Ingestion and Stream Processing**: How do we build a scalable data ingestion process? Modern companies need platforms which can redirect gigabytes of data per second, while handling interruptions gracefully and preserving the integrity of the data.
- **IoT Case Study**: You're now prepared to embark on building your own end-to-end ETL pipeline in the cloud. You will stream data from your smartphone to an event ingestor, process that data, and write it out to cloud storage. You will then be able to read the data into Azure ML for analysis and processing.

By the end of this course students will be able to:

- ✓ acquire, clean, and parse large sets of data using Python,
- ✓ choose the appropriate modeling technique to apply to your data,
- ✓ programmatically create predictive data models using machine learning techniques,
- ✓ apply probability and statistics concepts to create and validate predictions about your data, and
- ✓ communicate your results to an appropriate audience.

Deep Learning (Seminar)

Duration: 60 hours

The purpose of this 60-hour class is to help you master the core concepts of neural networks, including modern techniques for deep learning. After working through the lessons, you will have written code that uses neural networks and deep learning to solve complex pattern recognition problems. And you will have a foundation to use neural networks and deep learning to attack problems of your own devising. We'll develop living code, not just abstract theory, code which you can explore and extend. This way you'll understand the fundamentals, both in theory and practice, and be well set to add further to your knowledge.

One conviction underlying the course is that it's better to obtain a solid understanding of the core principles of neural networks and deep learning, rather than a hazy understanding of a

long list of ideas. If you've understood the core ideas well, you can rapidly understand other new material. In programming language terms, think of it as mastering the core syntax, libraries and data structures of a new language. You may still only "know" a tiny fraction of the total language – many languages have enormous standard libraries – but new libraries and data structures can be understood quickly and easily.

What you'll learn

- Image Recognition
- Convolution Neural Networks (CNN)
- Overfitting
- Embeddings and Natural Language Processing
- Recursive Neural Networks
- Convolution Neural Networks (CNN) Architectures

By the end of this course students will be able to understand the core principles behind neural networks and deep learning by working on a concrete problem: the problem of teaching a computer to recognize problems like Dogs vs Cats. This problem is extremely difficult to solve using the conventional approach to programming. And yet, as we'll see, it can be solved well using a simple neural network and with just a few lines of code. What's more, we'll improve the program through many iterations, gradually incorporating more and more of the core ideas about neural networks and deep learning.

R Foundations (Seminar)

Duration: 40 hours

Overview

The beginner's R Foundations course is the first stop in your journey in the R programming language. In this R course, you will learn about conditional statements, loops and functions to power your own R scripts. Next, you will learn to make your R code more efficient and readable using the apply functions. Finally, the utilities module will get you up to speed with regular expressions in the R programming language, data structure manipulations and times and dates. This R course will allow you to learn R and take the next step in advancing your overall knowledge and capabilities while programming in R. You will also learn data analysis through understanding of relationships among variables. Exploring data with multiple variables requires new, more complex tools, but enables a richer set of comparisons. You will learn how to describe relationships between two numerical quantities. You will characterize these relationships graphically, in the form of summary statistics, and through simple linear regression models.

What you'll learn

- DATA PREPARATION & DATA EXPLORATION
  - Installing and getting started with R
  - Understanding the strengths and limitations of R
  - Google Analytics, Google Trends and Google Search Console Terms and Conditions with respect to data use
  - Reading and writing data with R
  - Data exploration and data preparation
- SCRIPTING AND FUNCTIONS
  - Common R functions and scripts
  - Writing R functions and scripts
  - Introduction to plotting engines in R
  - Programming efficiently in R
  - Retrieving and loading Google Analytics data with R
- DATA SOURCES AND VISUALIZATION
  - Retrieving Google Trends and Google Search Console data with R
  - Curve Fitting, prediction and interpolation
  - Geostatistics, geocoding and mapping
  - Advanced graphics building and communicating your case in graphics
- INTERACTIVE VISUALIZATIONS
  - Using Shiny for simple interactive visualizations
  - Setting up batch jobs to maintain historical data
- CORRELATIONS AND PREDICTIVE MODELS
  - Advanced tools and packages and developing predictive models with R
  - Using R to prepare both static and interactive graphics of web analytics data
  - Using R to prepare correlations and predictive models of web analytics behavior

By the end of this course students will be able to:

- ✓ apply R programming for Data Analysis and
- ✓ apply R programming for advanced scenarios including Geostatistis, web analytics and Shiny for interactive visualizations.

Executive Data Science (Seminar)

Duration: 40 hours

Overview

In this course, you will learn what you need to know to begin assembling and leading a data science enterprise, even if you have never worked in data science before. You'll get a crash course in data science so that you'll be conversant in the field and understand your role as a leader. You will also learn how to recruit, assemble, evaluate, and develop a team with complementary skill sets and roles. You will learn the structure of the data science pipeline, the

goals of each stage, and how to keep your team on target throughout. Finally, you'll learn some down-to-earth practical skills that will help you overcome the common challenges that frequently derail data science projects.

What you'll learn

- CRASH COURSE TO DATA SCIENCE: Understand what the terms mean and how they play a role in successful organizations, learn what all the data science action is about, including those who will eventually need to manage data scientists.
- BUILDING A DATA SCIENCE TEAM: Data science is a team sport. As a data science executive, it is your job to recruit, organize, and manage the team to success. We will cover how you can find the right people to fill out your data science team, how to organize them to give them the best chance to feel empowered and successful, and how to manage your team as it grows.
- MANAGING DATA ANALYSIS: Describe the process of analyzing data and how to manage that process. We describe the iterative nature of data analysis and the role of stating a sharp question, exploratory data analysis, inference, formal statistical modeling, interpretation, and communication. In addition, we will describe how to direct analytic activities within a team and to drive the data analysis process towards coherent and useful results.
- DATA SCIENCE IN REAL LIFE: Have you ever had the perfect data science experience? The data pull went perfectly. There were no merging errors or missing data. Hypotheses were clearly defined prior to analyses. Randomization was performed for the treatment of interest. The analytic plan was outlined prior to analysis and followed exactly. The conclusions were clear and actionable decisions were obvious. Has that ever happened to you? Of course not. Data analysis in real life is messy. How does one manage a team facing real data analyses? We contrast the ideal with what happens in real life. By contrasting the ideal, you will learn key concepts that will help you manage real life analyses. You will learn also learn about the contemporary trends in Big Data, IoT, and Cognitive Artificial Intelligence (AI).
- EXECUTIVE DATA SCIENCE CAPSTONE: The Executive Data Science Capstone, the culminating project, is an opportunity to apply what they've learned to a real-world scenario. Your task will be to lead a virtual data science team and make key decisions along the way to demonstrate that you have what it takes to shepherd a complex analysis project from start to finish. You will prepare and deliver a presentation, which will be evaluated by your fellow participants.

By the end of this course students will be able to:

- assemble the right team,
- ask the right questions, and
- avoid the mistakes that derail data science projects.

Data Science for Process Mining (Seminar)

Duration: 40 hours

Overview

Process mining is the missing link between model-based process analysis and data-oriented analysis techniques. Through concrete data sets and easy to use software the course provides data science knowledge that can be applied directly to analyze and improve processes in a variety of domains.

Data science is the profession of the future, because organizations that are unable to use (big) data in a smart way will not survive. It is not sufficient to focus on data storage and data analysis. The data scientist also needs to relate data to process analysis. Process mining bridges the gap between traditional model-based process analysis (e.g., simulation and other business process management techniques) and data-centric analysis techniques such as machine learning and data mining.

Process mining seeks the confrontation between event data (i.e., observed behavior) and process models (hand-made or discovered automatically). This technology has become available only recently, but it can be applied to any type of operational processes (organizations and systems). Example applications include analyzing treatment processes in hospitals, improving customer service processes in a multinational, understanding the browsing behavior of customers using booking site, analyzing failures of a baggage handling system, and improving the user interface of an X-ray machine. These applications have in common that dynamic behavior needs to be related to process models.

The course explains the key analysis techniques in process mining. Participants will learn various process discovery algorithms. These can be used to automatically learn process models from raw event data. Various other process analysis techniques that use event data will be presented. Moreover, the course will provide easy-to-use software, real-life data sets, and practical skills to directly apply the theory in a variety of application domains.

This course starts with an overview of approaches and technologies that use event data to support decision making and business process (re)design. Then the course focuses on process mining as a bridge between data mining and business process modeling.

What you'll learn

- Process Modeling, Analysis, and Data Mining
- Process Models and Process Discovery
- Conformance Checking and Process Model Enrichment
- Analyzing Lasagna and Spaghetti Processes
- Implement End-to-End Case Study

By the end of this course students will be able to:

- ✓ have a good understanding of Business Process Intelligence techniques,
- ✓ relate process mining techniques to other analysis techniques such as simulation, business intelligence, data mining, machine learning, and verification,
- ✓ apply basic process discovery techniques to learn a process model from an event log (both manually and using tools),
- ✓ apply basic conformance checking techniques to compare event logs and process models (both manually and using tools),
- ✓ extend a process model with information extracted from the event log (e.g., show bottlenecks),
- ✓ have a good understanding of the data needed to start a process mining project,
- ✓ characterize the questions that can be answered based on such event data,
- ✓ explain how process mining can also be used for operational support (prediction and recommendation), and
- ✓ conduct process mining projects in a structured manner.

Cloud Computing Consultant (Seminar)

Duration: 120 hours

Overview

The 120-hour course is a practical introduction to the application of well architected cloud solutions. The course is designed to teach cloud computing consultants how to optimize the use of the cloud services by understanding how these services fit into cloud-based solutions. Because architectural solutions may differ depending on industry, type of applications, and size of business, this course emphasizes cloud best practices and recommended design patterns to help students think through the process of architecting optimal IT solutions. It also presents case studies throughout the course that showcase how some customers have designed their cloud infrastructures and the strategies and services they implemented.

You will understand the concepts specific to designing and deploying scalable, highly available, selecting the appropriate service based on data, compute, database, or security requirements, and identifying appropriate use of architectural best practices. This course is intended for System Administrators and Software Developers that have working knowledge of one or more high-level programming languages and intermediate knowledge of designing cost efficient, available, fault-tolerant, and scalable distributed systems.
Opportunities to build a variety of infrastructures via a guided, hands-on approach are also provided. This course will help you understand how to use the Software Development Kits (SDK) to develop secure and scalable cloud applications, provides in-depth knowledge about how to interact with cloud platforms using code and covers key concepts, best practices, and

troubleshooting tips. This course also includes step-by-step lessons, hands-on labs, notes, and quizzes to help you prepare for the three AWS associate exams. The course starts with the core concepts and takes you through everything you need to know to be a Cloud Computing Professional.

What you'll learn

- MANAGING LINUX AND WINDOWS SYSTEMS
  - Linux Fundamentals
  - Linux Security and Networking
  - Bash scripting, Managing services and processes
  - Windows Fundamentals, Windows Administration, and Windows Monitoring
  - System Administration Fundamentals – Networking, Computing Infrastructure, and Web Servers
- COMPUTING IN CLOUD
  - Cloud Segments, Cloud Deployment Models, Cloud Security
  - Fundamentals of Cloud Services (storage and compute)
  - Relational Database Fundamentals
  - Web Services, Application Logging and Message Queues
- IMPLEMENTING SOLUTIONS USING REFERENCE ARCHITECTURES
  - Reference Architectures
  - DevOps Use case / scenarios to employ various AWS services
  - Use Cases and Labs

By the end of this course students will be able to:

- ✓ apply the best architecture frameworks to build cloud-based infrastructure that is more efficient to increase performance and reduce costs,
- ✓ apply best practices infrastructure that is scalable, reliable, and highly available managed services to enable greater flexibility and resiliency in an infrastructure, and
- ✓ take the Associate Certification Exams.

DevOps Engineering Consultant (Seminar)

Duration: 120 hours

Overview

The purpose of this intermediate course is to help you master the core concepts of provisioning, operating, and managing distributed applications. The course covers the core principles of the DevOps methodology and examines many use cases applicable to startup, small and medium-sized business, and enterprise development scenarios. This course is intended for System Administrators and Software Developers that have working knowledge of one or more high-level programming languages (C#, Java, PHP, Ruby, Python, etc.) and

intermediate knowledge of administering Linux or Windows systems at the command-line level. Any one of the three AWS or Azure associate certificates is a pre-requisite for this course.

What you'll learn

- BUILD AUTOMATION AND DEPLOYMENT WITH MICROSERVICES
    - Case Study Introduction Part I
    - Build Automation
    - Configuration Management and Deployments
    - Running Container Clusters

- BUILD AUTOMATION AND DEPLOYMENT MONITORING
    - Case Study Introduction Part II
    - Build Automation
    - Configuration Management and Deployments
    - Running Container Clusters

- BUILD AUTOMATION AND DEPLOYMENT PRODUCTION READINESS
    - Case Study Introduction Part III
    - Build Automation
    - Configuration Management and Deployments
    - Running Container Clusters

By the end of this course students will be able to:

- ✓ apply Infrastructure as Code – Design and Security, and Configuration Management,
- ✓ apply techniques specific to Continuous Integration, and Continuous Deployment,
- ✓ automate deployment of applications using Delivery Pipelines,
- ✓ performance-Tune Deployments, Administer and Automate Infrastructure,
- ✓ perform an architecture review of Automation and Deployment, and
- ✓ create a production-ready checklist for Service deployment.

Ethical Hacking and Countermeasures (Seminar)

Duration: 40 hours

Overview

Ethical hacking is the process of testing and validating an Information Technology (IT) system to determine its weaknesses and assess its vulnerabilities. Businesses and government organizations hire cybersecurity professional to break past their online security systems so that they can recommend measures that help prevent data theft and fraud. Also known as penetration testers or information security analysts, ethical hackers identify potential threats and help mitigate the risk of a real cyber-attack. The purpose of this intermediate course is to help individuals master the core concepts of ethical hacking.

The Ethical Hacking training course will significantly benefit security officers, auditors, security professionals, site administrators, and anyone who is concerned about the integrity of the network infrastructure.

What you'll learn

- Introduction to Ethical Hacking
- Footprinting and Reconnaissance
- Scanning Networks
- Enumeration
- Vulnerability Analysis
- System Hacking
- Malware Threats
- Sniffing
- Social Engineering
- Denial-of-Service
- Session Hijacking
- Evading IDS, Firewalls, and Honeypots
- Hacking Web Servers
- Hacking Web Applications
- SQL Injection
- Hacking Wireless Networks
- Hacking Mobile Platforms
- IoT Hacking
- Cloud Computing
- Cryptography

By the end of this course students will be able to assist IT organizations beef up the information security posture using the knowledge of with the most current security domains.

Networking and Security Foundations (Seminar)

Duration: 100 hours

Overview

The A+, Net+ and Security+ certifications are generally the benchmark of most entry-level positions in Information Technology. This course is designed to helps students obtain valuable knowledge that they can apply beyond the classroom and within the workplace. This accelerated module provides IT professionals with the understanding of hardware, networking and security skills, while providing the technical and performance-based expertise.

What you'll learn

- Identify the hardware components of personal computers and mobile digital devices.
- Identify the basic components and functions of operating systems.
- Identify networking and security fundamentals.
- Identify the operational procedures that should be followed by professional PC technicians.
- Install, configure, and troubleshoot display devices.
- Install and configure peripheral components.
- Manage system components.
- Manage data storage.
- Install and configure Microsoft Windows.
- Optimize and maintain Microsoft Windows.
- Work with other operating systems.
- Identify the hardware and software requirements for client environment configurations.
- Identify network technologies.
- Install and configure networking capabilities.
- Support mobile digital devices.
- Support printers and multifunction devices.
- Identify security threats, vulnerabilities, and controls.
- Implement security controls.
- Troubleshoot system-wide issues.
- Describe the purpose of networking protocols and networking in general
- Identify features of various network operating systems and the clients used to access them.
- Describe the OSI networking model and its relationship to networking components.
- Describe the network components relating to the Physical layer of the OSI model.
- Describe the function of the Data Link layer of the OSI model.
- Explain how data is transmitted over a network.
- Describe the function of the Network layer of the OSI model.
- Describe the function of the Transport layer of the OSI model.
- Describe the function of the Session layer of the OSI model.
- Explain the fundamental concepts of the TCP/IP protocol suite.
- Explain the use of TCP/IP addresses and subnets.
- Access and use a TCP/IP network.
- Describe the requirements for remote network access.
- Explain the need for and ways to implement network security and fault tolerance.
- Describe the types of information that need to be gathered prior to installing or updating a network operating system.
- Explain ways to monitor and manage a network.
- Describe a systematic approach for troubleshooting network problems.
- Networking Concepts

- Infrastructure
- Network Operations
- Network Security
- Network Troubleshooting and Tools

By the end of the course the students will have the basic computer user skills to obtain a job as an entry-level IT technician.

Network Pentesting and Exploitation (Seminar)

Duration: 40 hours

Overview

Network Exploitation and Pentesting exposes students to all manner of reconnaissance, scanning, enumeration, exploitation and pillaging for 802.3 networks. Topics expose students to a variety of recon, discovery, scanning, enumeration, exploitation, post-exploitation, pillaging, covering one's tracks and persistence. This course is for Penetration testers looking to broaden their overall penetration testing skill set, network engineers, system administrators, and developers.

What you'll learn

- Target Analysis
- Scanning and Exploitation
- Insider Threat Simulation
- Malicious Binaries

By the end of this course students will have in-depth exposure and hands-on practice with all facets of 802.3 hacking, vulnerability research, pivoting, exploitation, password/hash cracking, post-exploitation pillaging and methods of setting up persistence on a victim's network.

Wireless Pentesting and Exploitation (Seminar)

Duration: 40 hours

Overview

Wireless Pentesting and Exploitation introduces students to all manner of reconnaissance, scanning, enumeration, exploitation and reporting for 802.11 networks. The lab topics expose students to a variety of survey, database creation, scripting, and attack methods that can be used to gain a foothold into a client's network during a penetration test. This course is for

penetration testers looking to broaden their overall penetration testing skill set, wireless engineers, system administrators and developers.

What you'll learn

- **Scanning:** conduct wireless penetration tests using open-source tools against 802.11 a/b/g/n networks. In addition, students will identify characteristics and common vulnerabilities associated with WiFi.
- **Conducting Surveys:** Learn to use open-source tools and hardware to conduct both mobile and static 802.11 a/b/g/n surveys. Planning and executing surveys will be covered in depth as well as data management and database management techniques.
- **Surveys, Encryption, and Exploitation:** Continue to use Kismet and Airodump-ng to conduct mobile surveys, database the information and create .kml files to visualize survey data. Students are then exposed to an in-depth discussion on advanced encryption security processes followed by learning how to use open-source tools to exploit the security process.
- **Man-in-middle Attacks:** Learn how to conduct Man-in-the-Middle attack using easy-creds and a fake access point. Learn how to conduct various types of attacks, traffic capture, and credential harvesting once a victim connects.

By the end of this course students will have in-depth exposure to all facets of 802.11 penetration testing, encryption cracking, post-exploitation pillaging and report writing.

Python for Pentesting (Seminar)

Duration: 40 hours

Overview

Python for Pentesters is designed for pentesters who want to use Python to build specialized tools. This challenging module will expose students to target scanning, enumeration, exploit development, web application attacks, and persistence mechanisms through Python scripting. Upon completion, students will have built an arsenal of over 20 penetration testing tools. This course is designed for students who have basic programming/scripting experience in C or Python, knowledge of networking concepts, and knowledge of penetration testing methods and hacking tools.

What you'll learn

- **Introduction to Building Pentest tools**: Students will review Python fundamentals and will develop target scanning and enumeration tools using modules from the Python Standard Library as well as third party modules.
- **Scanners**: Students will begin by creating custom scanners using the Nmap module. They will develop algorithms to parse complex data sets and build additional functionality into their custom tools.
- **Exploit Development**: Students will begin by taking a deep look at x86 memory architecture, operating system controls and debugging. Students will then learn how to construct exploits against stack-based buffer overflows, as well as how to embed shellcode into their Python scripts.
- **Exploit Web Application Vulnerabilities**: Students will learn about common web application vulnerabilities, reconnaissance methods and attack vectors. Students will then write code to identify and exploit Standard Query Language (SQL) and Cross-Site Scripting (XSS) vulnerabilities to reveal server-side details, as well as to find directory traversal vulnerabilities.
- **Post-Exploitation**: Students will learn how to conduct post-exploitation pillaging and employ persistence techniques. They will then learn how to build reverse shells, send encoded data via HTTP requests, and control their persistence tool via command-and-control mechanisms.

By the end of the course the students will have the knowledge necessary to analyze technical situations, solving them through the development of Python tools.

PowerShell for Pentesting (Seminar)

Duration: 40 hours

Overview

PowerShell for Pentesters introduces PowerShell for system and application management. Through presentations, white-board discussions, and goal-based labs, this module covers various topics that are designed to take the student from just starting out with PowerShell to an intermediate level. This course is targeted at IT staff with a good understanding of general systems installation, administration, and troubleshooting. Previous programming and/or scripting experience is beneficial but not required.

What you'll learn

- **Introduction**: Describe the command-line shell and then introduces PowerShell and its main components and features like the ISE, workflows, desired state configuration.
- **Commands 1**: PowerShell commands and their syntax are discussed along with key cmdlets.
- **Pipeline 1**: Describe how multiple PowerShell commands can be used together to become a very powerful utility command.

- **Commands 2**: Introduce how multiple commands can be combined in PowerShell language features like script blocks, functions, and remoting.
- **Scripts**: The concept of packaging commands into script files is introduced here. Script execution, command lookup precedence and using the integrated scripting environment.
- **Help System**: Managing and using the built-in help system.
- **Object Models**: PowerShell as an object-based language is discussed in this module, along with the associated terminology.
- **Operators 1**: The PowerShell scripting language provides the user with many operators.
- **Pipeline 2**: Builds on the previous pipeline module and includes intermediate level information on using the pipeline.
- **Providers**: PowerShell's support for interaction with various data sources (such as file system, Windows registry, certificate store).
- **Variables and Data Types**: Builds on the previous Operators module and introduces more operators.
- **Operators 2**: Different types of variables and how they are used in PowerShell.
- **Arrays**: Creating, managing and using arrays to store and access information.
- **Hash Tables**: Creating, managing and using hash tables.
- **Flow Control**: This module introduces looping, branching and flow control statements.
- **Scopes**: Concept of scopes as a protection mechanism and how to work with them.
- **Packaging & Distribution**: PowerShell Modules as a code packaging and distribution method.

Lessons are organized by scenario and designed to provide students with expertise, tools and hands-on experience with Windows PowerShell.

Packet Analysis with Wireshark (Seminar)

Duration: 40 hours

Overview

Packet Analysis with Wireshark is for security analysts that includes 46 step-by-step labs in analyzing traffic to learn how an application works, troubleshoot slow network performance, and determine whether a machine is infected with malware. Learning to capture and analyze communications with Wireshark will help in understanding how TCP/IP networks function.

What you'll learn

- Customize Wireshark Views and Settings
- Determine the Best Capture Method and Apply Capture Filters
- Display Filters to Focus on Specific Traffic

- Color and Export Interesting Packets
- Build and Interpret Tables and Graphs
- Reassemble Traffic for Faster Analysis
- Add Comments to Your Trace Files and Packets
- Use Command-Line Tools to Capture, Split, and Merge Traffic

Competing in Capture the Flag Events (Seminar)
Duration: 40 hours

Overview
Computer security represents a challenge to education due to its interdisciplinary nature. Topics in computer security are drawn from areas ranging from theoretical aspects of computer science to applied aspects of information technology management. This makes it difficult to encapsulate the spirit of what constitutes a computer security professional. One approximation for this measure has emerged: the 'capture the flag' competition. Attack-oriented CTF competitions try to distill the essence of many aspects of professional computer security work into a single short exercise that is objectively measurable. The focus areas that CTF competitions tend to measure are vulnerability discovery, exploit creation, toolkit creation, and operational tradecraft.

A modern computer security professional should be an expert in at least one of these areas and ideally in all of them. Success in CTF competitions demands that participants be an expert in at least one and ideally all these areas. Therefore, preparing for and competing in CTF represents a way to efficiently merge discrete disciplines in computer science into a focus on computer security.

What you'll learn
Two Capture the flag (CTF) events are interspersed in the Cybersecurity Professional Penetration Tester program. Each CTF event is no more than 20 hours in length.

- Vulnerability Discovery: Auditing Source, Binaries and Webapps
- Exploit Creation: Binary and Webapp Exploits
- Forensics
- Toolkits: Creation and Preparation
- Operational Tradecraft

Enterprise Machine Learning (Seminar)
Duration: 60 hours

Overview

The 6-week intermediate level hands on course brings together the interdisciplinary fields of data science and machine learning, which is at the intersection of computer science, statistics, and business. You will start by applying various techniques and tools to help you acquire, clean, parse, and filter your data.

A significant portion of the course will be a hands-on approach to the fundamental modeling techniques based on Statistics, Machine Learning and Neural Networks/Deep Learning algorithms that enable you to build robust predictive models about real-world data and test their validity. You will also gain practice communicating your results and insights about how to build systems that are more intelligent using the data that you have gathered.

Hands on exercises on building diverse models including pricing, risk, recommenders, image and text classification will provide clear comprehension of selecting the right strategy given the business need. As Machine Learning practices in enterprises increasingly migrate to the Cloud, this course brings the latest of Cloud innovations from companies including Microsoft Azure, Amazon Web Services (AWS), Google Compute Platform (GCP). Get hands as well as additional training material to prepare for Machine Learning certifications provided by Cloud providers.

Capstone project helps crystalize concepts by building a Data Product that you can show case on github to prospective employers or senior leadership within your own organization.

What you'll learn

- **MACHINE LEARNING, BIAS-VARIANCE AND MODEL EVALUATION:** Model Selection, Evaluation and Diagnostics
- **REGRESSION AND CLASSIFICATION:** Build Regression and Classification models using Statistical and Neural Network techniques. Apply Model Evaluation and Model Interpretation techniques to help decide whether to use Statistical approach Vs Neural Networks.
- **NATURAL LANGUAGE PROCESSING:** Extract features from text (convert text into numbers & vectors) and build Sentiment Analysis using Naïve Bayes Classifiers and more advanced Neural Network techniques including Long Short-term Memory.
- **DECISION TREES AND ENSEMBLES, CLUSTERING:** Supervised Learning beyond classical models and Unsupervised learning with K-means.
- **BIG DATA & CLOUD CERTIFICATION PREPARATION:** Scaling data analysis with large datasets on Spark ML, Hadoop ecosystem in the Cloud (E.g.: Azure/AWS)

By the end of this course students will be able to:

- ✓ learn to Acquire, clean, and parse enterprise scale data sets using Python,
- ✓ gain knowledge on choosing the appropriate modeling technique to apply to your data,

- ✓ apply Statistics and Deep Learning concepts to create and validate predictions about your data at Enterprise Scale,
- ✓ communicate your results to an appropriate audience with compelling and interactive visualizations, and
- ✓ enable enterprises migrate machine learning models into Cloud.

ADMISSIONS POLICIES

Potential applicants are encouraged to speak with an Admissions Representative. The best method is website form submission or phone the campus and request to speak with Admissions. Applicants are welcome to visit the campus and request a tour. The Admissions representative will provide an overview of Divergence programs, schedule and financial options that are best match to applicant's background and desired career pathway.

Enrollment Requirements and Enrollment Dates

Admission into any Divergence Academy course requires that the student have a high school diploma or equivalent (General Education Diploma – GED) or a diploma from an institution of higher education accredited by an accrediting association recognized by the U.S. Department of Education. Service members may provide a Form DD-214, it contains separation/discharge information which can be used by employers for screening veterans, determining eligibility of VA benefits, reenlistment and for Divergence purpose of proof of high school equivalency. Divergence Academy does not admit ability-to-benefit students.

Required Equipment

All Divergence Academy students are required to have internet and browser access, minimum requirement is Chromebook or equivalent. Generally, devices with Windows are preferred, which is what will be modeled in instruction. Students are fine using Mac devices but will likely have to deal with dual learning responsibilities.

Admission Process

Our admissions process is designed for learners to explore our programs and discover the career path that will most likely lead to sustainable employment.

1. Submit a request to meet online or call 1-833-DIVERGE to share interest in attending one of the Programs or Seminars.
2. After the interest is confirmed by Admissions Coordinator, select applicants move forward to a scheduled Admissions Counselor interview. During this interview, the learner's background is gathered, and an opportunity is provided to the learner to ask additional questions.
3. Based on the post-interview assessment, an optional pre-course is assigned to the learner to better prepare for the immersive program.
4. Learner on request may meet with alumni and/or instructors (if applicable to the chosen course) to understand the outcomes of the program, and instruction

structure better. Alumni and/or instructor may recommend additional resources beyond Wookie course to prepare for the course.

5. Confirmation of admissions is sent by Admissions representative upon readiness confirmations from Steps 2-4.

Optional pre-work, also known as a Wookie course, is a preparatory assignment given to the students after learner's interest in a program is confirmed by the Admissions Coordinator. It is designed to introduce a learner to many of the topics which may be touched upon during the course. Completion ensures a baseline level of knowledge among students in a cohort. Mastery of each subject is not expected, but the completion informs Divergence Academy of the learner motivation, and cohort formation logistics including instructor assignments and the support structures required for course delivery.

Admissions and Pre-work Requirements

Coursed Offered	Admissions Requirements
Data Science Immersive	Suggest Bachelor's in STEM, or equivalent work experience utilizing SQL or Excel with familiarity of statistics.
Cybersecurity Core Technical	Suggest minimum of 2 years of professional work experience.
Cybersecurity Professional Penetration Tester	Require High School equivalency,
Cybersecurity Risk Management	Recommended for experienced security practitioners, managers and executives interested in proving their knowledge across a wide array of security practices and principles.

Wookie courses in Data and Cyber are provided to those seeking to join Divergence Immersive Programs. They serve the beginner to provide foundational knowledge necessary for day one of class. They also serve as a refresher for working professionals that are looking to get hands on technology.

After being accepted and completing the enrollment documents, students will begin the required onboarding and orientation process. By completing the steps, students develop familiarity with school resources and the programs used for class engagement.

Admissions Deadline

For all courses, the admissions deadline is 5 working days before day one of class. The only exception is in the case of re-enrollment. If an admitted student requests to enroll in a different session before the class starts, an approval may be granted pending availability.

VA Disbursement

Any covered individual wishing to attend classes using their GI BILL or VOC Rehab are covered under Title 38 United States Code Section 3679(e). A covered individual is any individual who is entitled to educational assistance under chapter 31, Vocational Rehabilitation and Employment, or chapter 33, Post-9/11 GI Bill benefits.

Applicants will provide a certificate of eligibility and can include a "Statement of Benefits" obtained from the Department of Veterans Affairs' (VA) website – eBenefits, or a VAF 28-1905 form for chapter 31 authorization purposes).

Delay of disbursement from the VA will not impose any penalty on the covered individual.
To proceed with the educational requirement prior to receipt of VA disbursement, covered individuals are required to submit a certificate of eligibility for entitlement to educational assistance no later than the first day of a course of education.

Foreign Transcript Evaluation

All foreign transcripts and degrees must be evaluated and translated to meet U.S. equivalency.

Policy for Granting Credits

Divergence Academy does not have articulation agreements in place with any other institutions at the time and does not accept the transfer credit from other institutions.

The transferability of credits you earn at Divergence Academy is at the complete discretion of an institution to which you may seek to transfer. Acceptance of the credits you earn at

Divergence Academy is also at the complete discretion of the institution to which you may seek to transfer. If the credits that you earn at Divergence Academy are not accepted at the institution to which you seek to transfer, you may be required to repeat some or all of your coursework at that institution. For this reason, you should make certain that your attendance at Divergence Academy will meet your educational goals. This may include contacting an institution to which you may seek to transfer after attending Divergence Academy to determine if your credits will transfer. Divergence Academy does not recognize acquired life experience and prior experiential learning as a consideration for enrollment or granting credit towards any of its certificate programs.

Cancellation Policy

A full refund, minus resource, and operational costs, will be made to any student who:

- Cancels the enrollment contract within 72 hours (until midnight of the third day excluding Saturdays, Sundays, and legal holidays) after the enrollment agreement is signed.
- Cancels enrollment within the student's first three scheduled class days, except that the school may retain not more than $200 in any administrative fees charged, as well as items of extra expense that are necessary for the portion of the program attended and stated separately on the enrollment agreement.

Program Refund Policy

1. Refund computations will be based on scheduled course time of class attendance through the last date of attendance. Leaves of absence, suspensions and school holidays will not be counted as part of the scheduled class attendance.

2. The effective date of termination for refund purposes will be the earliest of the following:

    a) The last day of attendance if the student is terminated by the school.
    b) The date of receipt of written notice from the student; or
    c) Ten school days following the last date of attendance.

3. If tuition and fees are collected in advance of entrance, and if after expiration of the 72-hour cancellation privilege the student does not enter school, not more than $200 in any administrative and materials fees charged shall be retained by the school for the entire residence program or synchronous distance education course.

4. If a student enters a residence or synchronous distance education program and withdraws or is otherwise terminated after the cancellation period, the school may not retain more than $200 in any administrative and materials fees charged for the entire program.

5. If a student enters a residence or synchronous distance education program and withdraws or is otherwise terminated after the cancellation period, the school may not retain more than $200 in any administrative and materials fees charged for the entire program. The minimum refund of the remaining tuition and fees will be the pro rata portion of tuition, fees, and other charges that the number of hours remaining in the portion of the course or program for which the student has been charged after the effective date of termination bears to the total number of hours in the portion of the course or program for which the student has been charged, except that a student may not collect a refund if the student has completed 50% of more of the total number of hours in the portion of the program for which the student has been charged on the effective date of termination.

6. A student who withdraws for a reason unrelated to the student's academic status after the 50% completion mark and requests a grade at the time of withdrawal shall be given a grade of "incomplete" and permitted to re-enroll in the course or program during the 12-month period following the date the student withdrew without payment of additional tuition for that portion of the course or program.

7. A full refund of all tuition and fees is due and refundable in each of the following cases:

   a) An enrollee is not accepted by the school.
   b) If the course of instruction is discontinued by the school and this prevents the student from completing the course; or
   c) If the student's enrollment was procured because of any misrepresentation in advertising, promotional materials of the school, or representations by the owner or representatives of the school.

Refund to which a student is entitled upon termination or withdrawal	
10% of program completed	90% less cancellation charge
20% of program completed	80% less cancellation charge
30% of program completed	70% less cancellation charge
40% of program completed	60% less cancellation charge
50% of program completed	50% less cancellation charge
60% of program completed	40% less cancellation charge
70% of program completed	30% less cancellation charge
80% of program completed	20% less cancellation charge
90% of program completed	10% Refunded

Refund Policy for Students Called to Active Military Duty

(In Accordance with VA Regulation 21.4255-1)

A student at the school or college who withdraws from the school or college as a result of the student being called to active duty in a military service of the United States or the Texas National Guard may elect one of the following options for each program in which the student is enrolled:

(a) if tuition and fees are collected in advance of the withdrawal, a pro rata refund of any tuition, fees, or other charges paid by the student for the program and a cancellation of any unpaid tuition, fees, or other charges owed by the student for the portion of the program the student does not complete following withdrawal;

(b) a grade of incomplete with the designation "withdrawn-military" for the courses in the program, other than courses for which the student has previously received a grade on the student's transcript, and the right to re-enroll in the program, or a substantially equivalent program if that program is no longer available, not later than the first anniversary of the date the student is discharged from active military duty without payment of additional tuition, fees, or other charges for the program other than any previously unpaid balance of the original tuition, fees, and charges for books for the program; or

(c) the assignment of an appropriate final grade or credit for the courses in the program, but only if the instructor or instructors of the program determine that the student has:

    (1) satisfactorily completed at least 90% of the required coursework for the program; and

    (2) demonstrated sufficient mastery of the program material to receive credit for completing the program.

ACADEMIC POLICIES

Attendance

Divergence Academy programs are designed for real-time engagement. Attendance with engagement is paramount to successful outcomes. Students should strive for full attendance, but **75% attendance of the total program is the minimum expectation**. Students with inconsistent attendance will limit their potential success and struggle to keep pace with learning demand.

Students are fully responsible for recovering learning and making up work from absences using the many resources Divergence Academy provides.

Attendance is monitored throughout the programs, and progress checks are made at the end of each module. Students whose attendance drops below 75% of *completed* program will be given warning and opportunity to improve. Students with continued attendance deficiency may be dropped from their program. Students whose attendance drops below 75% of *total* program may be dropped without further opportunity to improve. (See details in *Attendance Probation* section)

*Due to current needs allowing full remote delivery of classes, Divergence Academy monitors engagement as an indication of attendance or lack thereof. Instructors may exit students from online class if students are non-responsive or choosing to NOT engage. Attendance will be revised accordingly. When evidence indicates a student is misrepresenting attendance, Divergence Academy team members may revise “Present” status to “Absent” for those days. Students who show a pattern of misrepresenting attendance can be immediately dropped from the program and lose access to any/all resources.

Attendance Probation

Divergence Academy may contact any student with multiple uninformed absences for a wellness check. Contact is not a probation or warning. A warning will be given to students at risk of or if fallen below attendance expectations.

At progress checks, a student whose attendance rate falls below 75% *of the completed program* will be put on probation. The student will have until the end of the module to raise their attendance rate to expectations, or they can be dropped from the program.

Regardless of probation, a student whose attendance falls below 75% *of total program hours* can be immediately dropped.

Partial Attendance & Tardiness

The 75% attendance expectations can be considered by the hourly count, not just by days. Partial absences may be in the form of tardies, early exits from daily class, or mid-day gaps. If the cumulative loss of hours is determined to be greater than 25% of the *completed* program, the student may be placed on probation (see *Attendance Probation* section). If the cumulative loss of hours is determined to be greater than 25% of the *total* program, the student may be immediately dropped.

Students found to be mis-representing their attendance, even partially, will be given 1 formal warning. If the student continues to misrepresent their attendance, even partially, they can be dropped from the program.

Hours

Academic credit is measured in clock hours. One hour of instructional time is defined as a sixty-minute period.

Programs	Code	Length	Modules
Data Science Immersive	DSI	400 hours	4
Data Science Immersive Remote	DSI	400 hours	4
Cybersecurity Professional Penetration Tester	CPPT	400 hours	3
Cybersecurity Professional Penetration Tester Remote	CPPT	400 hours	3
Cybersecurity Core Technical	CCT	400 hours	3
Cybersecurity Core Technical Remote	CCT	400 hours	3
Cybersecurity Risk Management	CRM	400 hours	3
Cybersecurity Risk Management Remote	CRM	400 hours	3

Class Schedules

Weekday classes	9:00 – 6:00
Weekday a.m. classes	9:00 – 1:00
Weekday p.m. classes	2:00 – 6:00
Weekend classes	8:00 – 6:00

Homework

Generally, there are not explicitly assigned homework activities. However, labs and class activities will require extra time outside of class to complete. Due to the volume of content and learning demand, students who can commit hours beyond class time achieve more development from the program. Students who do not spend extra hours outside of class will likely not complete all expected work.

The amount of time needed outside of class to complete labs or activities will vary by student.

Standard of Progress

Divergence Academy measures student progress through assignments, activities, and/or projects depending on the program. Students are evaluated per class as *Met expectations* or *Did not meet expectations*. Minimum expectations will be provided by class in each program.

Divergence Academy does not have a cumulative final examination for completion of any program. Beyond assignment completion, instructors provide observational evaluation at the end of each class as an informal indicator of progress and/or engagement.

Based on instructor feedback, some students can be recognized as *Exceeds expectations* for going above and beyond to learn, to engage, to support teammates, or to achieve.
Progress checks are completed by a Divergence Academy team member at the end of each program module. If behind, students can complete missing work at any time while enrolled to catch up.

Program Grading System

Grade	Definition
P (Pass)	Completed the program. Met minimum course requirements.
F (Fail)	Completed the program. Did not meet minimum course requirements.

Students who pass will receive a certificate of completion at the end of program and have full access to the services and resources available. We highly value and promote the benefits of being active in our alumni network. If not meeting expectations (either attendance or progress) and not improving, a student would likely be dropped before being allowed to complete a program unsuccessfully.

Withdrawal and Drop Policy

Withdrawal	Student decision to exit the program for an appropriate reason unrelated to academic status
Drop	School decision to exit a student from a program due to academic status, attendance, or conduct. Note: A student choosing to 'withdraw' from their program after being notified of unsatisfactory academic status, will be considered a Drop.

Divergence Academy sincerely asks that any student considering withdrawing reach out to Academic Department leadership to discuss supports or options that might enable successful progress and continuation in a program.

A student may choose to withdraw from their enrolled program after start-date for various reasonable circumstances. Divergence Academy recognizes students' right to privacy, but the student should submit a letter/email/message to Academic Department leadership with an appropriate level of explanation. Some form of an exit interview is required for necessary information transaction, so both parties have aligned understanding of expectations and any future opportunity.

In the case of sub-standard academic status, students will be given at least 1 formal warning and opportunity to improve before being dropped. In the case of minor conduct concerns, 1 formal warning will be given, and a behavioral contract can be required for student to continue. In the case of significant improper conduct (described in Student Conduct section), a student may be dropped immediately. This Code of Conduct stands as warning.

Any student who withdraws or is dropped from their enrolled program is subject to all accrued charges. All calculations will be based on the approved Refund Policy provided by the Texas Workforce Commission Career Schools and Colleges.

Class Retake Policy

A student that fails to meet expectations in a class may request to repeat that class free of cost, one time only. Class retake opportunities must be within 6 months of program end-date. Perfect attendance is expected for any class retake opportunity granted.

Requests will be submitted to Academic Department leadership via letter, email, or message. Request's approval is also contingent on available seats. No extra resources must be provided. Approval is not guaranteed.

Program Retake Policy

A former student who withdrew from a program for a reason unrelated to the student's academic status and following Divergence Academy procedures may re-apply to same or a different program by applying through the Admissions process.

A former student who was dropped from a program and wants to re-enroll (the same or another program) must first submit a letter/email to Academic Department leadership explaining the change in circumstances warranting another opportunity. Approval is not guaranteed.

No greater expectations will be placed on a student retaking a program than apply to all other students.

Student Conduct Expectations

Students are expected to dress and act appropriately while attending classes.
Disruptive behavior of any kind is unacceptable. The student will be given two warnings, 1 verbal and 1 written if their behavior continues. After being given warnings, the student will be

terminated and may not remain in class if disruptive behavior continues. Re-enrollment policies will apply.

At the discretion of the Academic Department administration, a student may be dismissed from the academy for a serious incident or repeated incidents of an intoxicated or drugged state of behavior, possession of drugs or alcohol upon institute premises, possession of weapons upon institute premises, behavior creating a safety hazard to other persons at the academy, disobedient or disrespectful behavior to other students, an administrator, or faculty member, or any other stated or determined infractions of conduct.

Cheating of any kind will not be tolerated. This will result in the student's dismissal from the course. Student can re-enroll per Drop policy.
SEXUAL HARASSMENT OF ANY KIND, WEAPONS OF ANY KIND, AND BEING UNDER THE INFLUENCE OF ANY SUBSTANCE WILL NOT BE TOLERATED. ANY STUDENT VIOLATING THIS RULE WILL BE TERMINATED AND CANNOT RE-ENROLL.

Student Grievance Procedure

1. All students are encouraged to voice or write their grievance/complaint to the Director of Academics in a respectful manner at an appropriate time. They are welcome to schedule a meeting to discuss concerns.
2. If the student's grievance/complaint cannot be resolved, the student will be given the opportunity to place their grievance/compliant in writing. A form will be provided and must be requested from the front office.
3. Any grievance/complaint can be submitted in written form at any time.
4. Or if their grievance/complaint is not resolved, the student has the option to submit their grievance/complaint to the state for review.
5. A record of any grievance/complaint will be kept confidential in the student's permanent file, whether voiced or written.

Texas Workforce Commission
Career Schools and Colleges Room 226T
101 East 15th Street
Austin, Texas 78778-0001
Phone: (512) 936-3100
texasworkforce.org/careerschools

2021 Academy Holiday Calendar

Jan 1	Friday	New Year's Day	DA closed
Jan 2-3	Sat-Sun		No class (weekend)
Jan 18	Monday	Martin Luther King Day	No class
Feb 15	Saturday	Presidents' Day	Class
April 2	Friday	Good Friday	Class
April 3-4	Sunday	Easter	No class (weekend)
May 31	Monday	Memorial Day	No class
July 3-4	Sat-Sun	Independence Day	No class (weekend)
July 5	Monday	*day after holiday wknd*	No class
Sept 6	Monday	Labor Day	No class
Oct 11	Monday	Columbus Day	Class
Oct 31	Sunday	Halloween	Class
Nov 11	Thursday	Veterans Day	Class
Nov 22-28		Thanksgiving	DA closed (week)
Dec 20 – Jan 2		Winter Holiday	DA closed (2 weeks)
Jan 3	Monday	First school day of 2022	Class

Faculty

Xerxes Cama	Lucky Rabago	Drew Minkin
Logan Hillard	Brett Harder	Thor Munoz
Eric Foulkrod	Brice Clements	Dingchao Zhang
Shane Walker	Naveen Bannagani	Vish Puttagunta
Jim Anderson	Carlos Gonzalez	Dao (Derrick) Qu
Ehkzin Ear	Joe Dion	Ross Ghiasi
Trevor Bowman	Juan Reyes	Vijay Koju
Marcel Samuels		

CAREER SERVICES

Divergence Academy offers student activities and services that empower and support the student in pursuit of employment. Upon enrollment students are asked to opt-in for the extensive services provided freely to students/alumni. Students are empowered to drive their outcomes and supported throughout the challenges of the job search.

Academic Counseling

Students can seek support on both personal and academic issues. Students are encouraged to discuss their scholastic and vocational goals with instructors, classmates, and both Academic Department and Career Services team members. Divergence Academy has a sincere interest in the personal welfare of each student and therefore an open-door policy is employed.

Placement Services

Even though enrollment in a program does not guarantee employment, Divergence Academy provides extensive opportunity and support to students/alumni. Divergence Academy stands apart from other institutions based on everything we do beyond content.

The Career Services staff assists students in their job searches by:

- Hosting weekly networking opportunities with potential employers and recruiters
- Providing resume development support
- Coaching practice interview sessions
- Offering career search sessions by local recruiters
- Matching students/alumni with job postings by companies in our Partner Network, and
- Offering information on job opportunities and temporary assignments.

The more flexible a graduate can be regarding initial employment, the easier it is for the school to assist in the placement process.

Meaningful Employment Forms

Students are required to complete a Meaningful Employment Form when they achieve the next step in their career pathway. Divergence Academy views all opportunities as a successful step forward and opportunity to continue professional development.

Alumni Support

Divergence Academy values our relationship with students above all else. Our goal to serve students is a long-term commitment, not just while they are temporarily enrolled. Once a team member, always a team member. As our alumni network grows, so do the benefits of staying connected. We hope alumni continue to come back for next trainings, next career supports, next employer webinars, and any next steps in their pathway.

TUITION AND FEES

Payment Policy

Unless otherwise agreed to in a private lending or financing agreement and as approved by Divergence Academy Assembly, all students are required to present confirmation of funding upon 24 hours of enrollment.

Students can request a payment plan unless a student is enrolled in a 1-week course. These payment plans must be approved by Divergence Academy during enrollment. If a student is partially paying for a course and a third party is paying the remainder of the course, students can request to participate in a payment plan for their portion of course costs, which, if approved by Divergence Academy, will be documented in a payment schedule.

Payment in full is a graduation requirement and certificates of completion will be withheld until full balance is paid. Divergence Academy may, in its sole discretion, refer a student's account to a collection agency without further notice to the student in the event the student is in default in any payment due. To the extent permitted by applicable law, the student agrees to pay all costs incurred by Divergence Academy in collecting the balance due.

Payment Plan	Payment Installments and Schedule
1/2 Payment Option	1/2 due within 7 days of the course start date. 1/2 due a month after previous invoice date.
1/3 Payment Option (Not available to students enrolled in courses less than 10 weeks in length.)	1/3 due within seven days of the course start date. 1/3 due a month after previous invoice date 1/3 due a month after previous invoice date
1/4 Payment Option (Not available to students enrolled in courses less than 10 weeks in length.)	1/4 due within 7 days of the course start date 1/4 due three weeks after previous invoice date 1/4 due three weeks after previous invoice date 1/4 due three weeks after previous invoice date

Third-Party Sponsor Payment Policy

A third-party sponsor payment form must be completed to provide authorization for Divergence Academy to bill a student's third party for all or part of their educational expenses.

The following terms and conditions apply to the student for third-party sponsor payment:

Third-party sponsor payments are not conditional on student performance in or completion of a course. It is the student's responsibility to provide their third-party sponsor the correct information concerning tuition and fees and any other information needed by the third-party sponsor. This is especially true if there are any changes to any charges after the original authorization form is submitted.

Third-party sponsorship does not relieve a student from any financial responsibility. The student is ultimately responsible for their educational costs. If a third-party sponsorship amount is changed or cancelled, for any reason, the student is responsible for unpaid amounts due to Divergence Academy. Future sponsorships are not allowed until current sponsorships are paid in full. A student cannot enroll in future courses or receive a certificate of completion until all charges on their account are paid in full.

Income Share Agreement Policy

Students in select programs may meet the eligibility criteria and elect to participate in a deferred tuition arrangement (also referred to as an income share agreement or "ISA"), whereby the student agrees to enroll in the program and to pay tuition plus an additional charge upon completion of the course after finding a job.

An ISA requires a student to pay a fixed percentage of earned income each month for a fixed period, with the total payment capped at the tuition for the program plus, for those students whose earnings are sufficiently high, additional amounts (as with finance charges for loans, these extra amounts generally defray administrative costs and the risk of non-payment). Monthly payments are recalculated when earned income changes, based on information provided by the graduate, such as an updated pay stub. During any months that earned income is below a certain threshold, the graduate will be placed in a deferment status and will not make payments.

Each ISA has a payment term, which includes a grace period following completion of the program. Students electing to participate in an ISA have the option of prepaying the ISA in full

at any time by paying an amount equal to the payment cap less all previous monthly payments and plus any outstanding fees, even if the time that the student was allotted to pay tuition after completion of his or her program has not yet expired.

A student's monthly payments end upon the earliest to occur of: (i) the date the required number of monthly payments are made; (ii) the date the graduate has paid the amount of the payment cap; or (iii) after the end of the payment term, which may be extended by any deferments for up to 48 months.

If a student withdraws from their program, they will still be responsible for their ISA payments (based on a prorated amount and subject to Divergence Academy's refund policy).

The full terms and conditions of a student's deferred tuition arrangement will be set forth in an ISA signed by the student and Divergence Academy.

Listing of Fees

Tuition includes the cost of the Books, and the other Materials such as Labs.

Immersive Programs	Total Cost
Data Science Immersive	$17.000
Data Science Immersive Remote	$17,000
Cybersecurity Core Technical	$13,000
Cybersecurity Core Technical Remote	$13,000
Cybersecurity Professional Penetration Tester	$18,000
Cybersecurity Professional Penetration Tester Remote	$18,000
Cybersecurity Risk Management	$18,000
Cybersecurity Risk Management Remote	$18,000

Seminars	Total Cost
Python for Data Analysis	$2,500
Data Science	$5,000

Data Science Adaptive	$7,500
Applied Big Data Analytics	$5,000
Deep Learning	$5000
R Foundations	$5,000
Executive Data Science	$5,000
Data Science for Process Mining	$5,000
Cloud Computing Consultant	$7,500
DevOps Engineering Consultant	$7,500
Networking and Security Foundations	$7,500
Network Pentesting and Exploitation	$3,500
Wireless Pentesting and Exploitation	$3,500
Python for Pentesting	$3,500
PowerShell for Pentesting	$3,500
Packet Analysis with Wireshark	$3,500
Ethical Hacking and Countermeasures	$3,500
Competing in Capture the Flag Events	$3,500
Enterprise Machine Learning	$5,000

THE INFORMATION CONTAINED IN THIS CATALOG IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

Signature
Signed by Sangeeta Ankaraju
Signature
Signed by Sravan Ankaraju