# Suggested Learning Paths

January 2021



## School of Data Science

## Foundational Analytics Learning Path

#### **Business Analytics**

- Spreadsheet Analysis
- Critical Problem Solving
- SQL
- Data Visualization w/ Tableau

## Predictive Analytics for Business

- Data Wrangling
- Alteryx
- Predictive analysis

#### Data Visualization

- Tableau StoryPoint
- Data presentation
- Data Storytelling

## Data Analytics Learning Path

## Programming for Data Science

- Python & Jupyter
- Numpy, Pandas, Matplotlib
- Git and Github
- SQL

#### **Data Analyst**

- Python, NumPy, Pandas
- Practical Statistics
- Data Wrangling
- A/B Testing

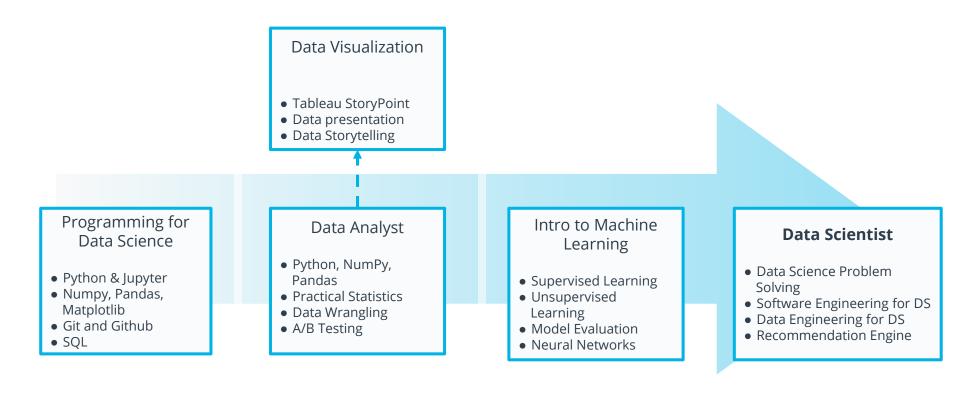
#### Data Visualization

- Tableau StoryPoint
- Data presentation
- Data Storytelling

## Analytics Learning Paths

#### **Business Analytics Predictive Analytics** for Business • Spreadsheet Analysis • Critical Problem Solving Data Wrangling SQL Alteryx Data Visualization w/ Predictive analysis Tableau Data Visualization • Tableau StoryPoint • Data presentation Programming for **Data Analyst** Data Storytelling Data Science • Python & Jupyter • Python, NumPy, Pandas • Numpy, Pandas, Practical Statistics Matplotlib Data Wrangling Git and Github A/B Testing SQL

## Data Science Learning Path



## Data Engineer Learning Path

#### Intro to Programming

- Programming with Python
- HTML and CSS
- Page Layout, Responsive Design

#### Programming for Data Science

- Python & Jupyter
- Numpy, Pandas, Matplotlib
- Git and Github
- SQL

#### **Full Stack Developer**

- Data Modeling for the Web
- API Development and Documentation
- Identity Access Management
- Server Deployment and Containerization

#### **Data Analyst**

- Python, NumPy, Pandas
- Practical Statistics
- Data Wrangling
- A/B Testing

#### **Data Engineer**

- Data Models SQL vs NoSQl
- ETL pipelines
- Data Lakes
- Spark

#### **Data Archite**

- Database Framewor
- Designing Data Syste
- Data Governance

# School of Artificial Intelligence

## Artificial Intelligence Learning Path

## Al Programming with Python

- Python
- Linear Algebra
- Calculus
- Intro to Neural Networks

#### Deep Learning

- Convolutional NNs
- Recurrent NNs
- GANS
- Deploying to Production

#### **Computer Vision**

- Feature Extraction
- Combining CNN & RNN
- Object detection and tracking

#### Al for Healthcare

- 2D Imaging
- 3D Imaging
- EHR Data
- Wearable Devices

#### Deep Reinforcement Learning

- Policy Based Methods
- Value Based Methods
- Multi Agent

#### Natural Language Processing

- Part of Speech Tagging
- Word Embeddings
- Communicating with Natural Language
- Amazon Alexa Skill

## Artificial Intelligence Learning Path



#### **New skills**

- Python & Jupyter notebooks
- Supervised & unsupervised Models
- Deep learning (CNNs, RNNs, GANs)
- Advanced deep learning topics for NLP or CV

## Machine Learning Engineer Learning Path

## Programming for Data Science

- Python & Jupyter
- Numpy, Pandas, Matplotlib
- Git and Github
- SQL

#### Intro to Machine Learning

- Supervised Learning
- Unsupervised Learning
- Model Evaluation
- Neural Networks

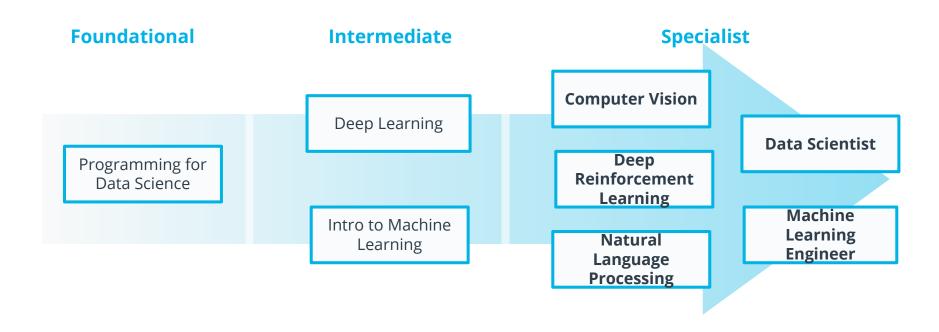
## Machine Learning Engineer

- Software Engineering for ML
- ML in Production
- SageMaker

## Machine Learning Engineer (Azure)

- Azure ML and SDK
- ML Pipelines
- ML Ops with Azure

## Artificial Intelligence Learning Path



## School of Business

## Product Management Learning Path

#### Agile

- Agile Frameworks
- Planning & Prioritization
- Progress & Communication

#### **Product Manager**

- Product Strategy
- Product Design
- Product Development
- Product Launch

#### Al Product Manager

- Al in business
- Creating a Dataset
- Building a Model
- Measuring Impact and Updating Model

#### Data Product Manager

- Applying Data Science
- Data Infrastructure
- Iterative Design Path

## Growth Product Manager (Not released yet: Q3)

- Growth and Acquisition Strategy
- Activation and Retention Strategy
- Monetization Strategy

## Digital Business Learning Path

#### **Digital Marketing**

- Content Strategy
- SEM and SEO
- Social Media Marketing
- Email Marketing

#### **Marketing Analytics**

- Interpreting Data Analytics
- Introduction to Data Visualization
- Google Analytics and Adwords

#### **Data Visualization**

- Tableau StoryPoint
- Dashboard Design
- Data presentation
- Data Storytelling

# School of Programming and Development

School of Cloud

### Developer Learning Path

#### Intro to Programming

- Programming with Python
- HTML and CSS
- Page Layout, Responsive Design

#### Front End Developer

- Data modelling for the web
- Javascript & DOM
- Web APIs and Asynch Apps
- Build Tools, Webpack

#### Intermediate Javascript

- Functional Programming
- Object oriented Programming
- Asynchronous Programming

#### **Full Stack Developer**

- Data Modeling for the Web
- API Development and Doc
- Identity Access Management
- Server Deployment and Containerization

#### **Java Web Developer**

- Spring Boot Basics
- Web Services and APIs
- Data Stores & Persistence
- Security and DevOps

#### **React Developer**

- Render UI
- React & Redux
- React Native

#### Blockchain Developer

- Blockchain Fundamentals
- Ethereum Contracts
- Blockchain Architecture
- Dapp with smart contracts

Specialist

Foundational

Practitioner

## Cloud Computing Learning Paths

#### Intro to Programming

- Programming with Python
- HTML and CSS, Page Layout
- Responsive Design
- Intro to Javascript

## Intermediate Javascript

- Object-oriented JavaScript
- Functional Programming
- Asynchronous development

#### **DevOps Engineer**

- Infrastructure as Code
- CI/CD Pipelines
- Role Based Security
- Containers and orchestration

#### **Cloud Developer**

- Microservices
- Scalable development
- Serverless applications
- Containers

#### **Cloud Architecture**

- Design for Availability, Reliability, and Resiliency
- Performance and Scalability
- Design for Security

## AWS Cloud Computing Learning Paths

Intermediate
Javascript
(coming soon)

#### Full Stack Developer

- Data Modeling for the Web
- API Development and Documentation
- Identity Access Management
- Server Deployment and Containerization

#### **AWS DevOps Engineer**

- Infrastructure as Code
- CI/CD Pipelines
- Role Based Security
- Containers and orchestration

#### **AWS Cloud Developer**

- Microservices
- Scalable development
- Serverless applications
- Containers

#### AWS Cloud Architecture

- Design for Availability, Reliability, and Resiliency
- Performance and Scalability
- Design for Security

## Azure Cloud Computing Learning Paths

#### Intermediate Python

- Object-oriented programming
- Modular code
- Python Package Index
- Advanced Python Topics

#### Full Stack Developer

- Data Modeling for the Web
- API Development and Documentation
- Identity Access Management
- Server Deployment and Containerization

#### Azure Cloud DevOps Engineer

- Infrastructure as Code
- Application Infrastructure
- Quality Releases
- Automated Testing

#### **Azure Cloud Developer**

- Azure Applications
- Microservices on Azure
- Migration to Azure
- Enhancing applications post-Azure migration

#### **Cloud Native Architecture**

- Microservices
- Message Passing
- Security
- Site Reliability Engineering

### Cybersecurity

## Intro to Cybersecurity

- Core Security Principles
- Security Compliance Standards
- Secure data at rest and in transit

#### **Security Analyst**

(December 2020)

- Secure Network Design
- Threat Analysis
- Monitoring/Logging Incidents

#### **Security Engineer**

(December 2020)

- Security Mindset
- Threat Modeling
- Practical Cryptography
- Systems Hardening
- Infrastructure Patching
- Web Application
   Vulnerabilities

#### **Enterprise Security**

- Corporate Networks
- Endpoint Security
- Identity and access management

#### Ethical Hacker

- Penetration Testing
- Vulnerability Assessment

## Digital Forensics & Incident Response

- Malware
- Detection Pipelines
- eDiscovery tool usage

#### Security for IoT

- Sensor data analysis
- Public key infrastructure

#### Security Architect

- Splunk
- Data Loss Protection
- System Design

\*\* Tentative programs for consideration in 2021