

# DevOps

## □ Introduction to DevOps

- Overview of DevOps
- Thinking DevOps
- Working DevOps
- Organizing for DevOps
- Measuring DevOps

## □ Introduction to Cloud Computing

- Overview of Cloud Computing
- Cloud Computing Models
- Components of Cloud Computing
- Emergent Trends and Practices
- Cloud Security, Monitoring, Case Studies, Jobs

## □ Introduction to Agile Development and Scrum

- Introduction to Agile and Scrum
- Agile Planning
- Daily Execution

## □ Hands-on Introduction to Linux Commands and Shell Scripting

- Introduction to Linux
- Introduction to Linux Commands
- Introduction to Shell Scripting

## □ Getting Started with Git and GitHub

- Git and GitHub Fundamentals
- Git Commands and Managing GitHub Projects

## □ Python for Data Science, AI & Development

- Python Basics
- Python Data Structures
- Python Programming Fundamentals
- Working with Data in Python
- APIs and Data Collection

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- Python Basics
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## □ Developing AI Applications with Python and Flask

- Python Coding Practices and Packaging Concepts
- Web App Deployment using Flask
- Creating AI Application and Deploy using Flask

## ☐ **Introduction to Containers w/ Docker, Kubernetes & OpenShift**

- Containers and Containerization
- Kubernetes Basics
- Managing Applications with Kubernetes
- The Kubernetes Ecosystem: OpenShift, Istio, etc.

## ☐ **Application Development using Microservices and Serverless**

- Introduction to Microservices
- Web API Essentials: REST API and GraphQL
- Serverless Overview
- Create and Deploy Microservices using Serverless

## ☐ **Introduction to Test and Behavior Driven Development**

- Introduction to Testing
- Test Driven Development
- Advanced Methods for Test Driven Development
- Behavior Driven Development
- Running Behave for Behavior Driven Development

## ☐ **Continuous Integration and Continuous Delivery (CI/CD)**

- Introduction to CI/CD
- Continuous Integration (CI)
- Continuous Delivery (CD)
- DevOps and GitOps with OpenShift

## ☐ **Application Security for Developers and DevOps Professionals**

- Introduction to Security for Application Development
- Security Testing and Mitigation Strategies
- OWASP Application Security Risks

## ☐ **Monitoring and Observability for Development and DevOps**

- Introduction to Monitoring for Applications
- Monitoring Systems and Techniques
- Methodologies and Tools in Logging
- Observability and Concepts

## ☐ **DevOps Capstone Project**

- Create and Execute Sprint Plans
- Develop a RESTful Service Using Test Driven Development (TDD)
- Add Continuous Integration (CI) and Security to a Repository
- Deploy Your Application to Kubernetes
- Build an Automated CD DevOps Pipeline