**ALISHA TAJ**

**DATA SCIENTIST**

**LEVEL 1**

1. "Machine Learning" by Coursera (offered by Stanford University):

LINK: https://www.coursera.org/specializations/machine-learning-introduction

* + Introduction to machine learning: Supervised learning, unsupervised learning, and linear regression.
  + Logistic regression and regularization.
  + Neural networks: Forward propagation, backpropagation, deep learning architectures.
  + Support vector machines (SVM).
  + Unsupervised learning and dimensionality reduction.
  + Anomaly detection and recommender systems.
  + Large-scale machine learning and gradient descent.
  + Application of machine learning algorithms in real-world scenarios.

**LEVEL 2**

Deep Learning Specialization" by Coursera (offered by deeplearning.ai)

LINK: <https://www.coursera.org/specializations/deep-learning?utm_medium=sem&utm_source=gg&utm_campaign=B2C_NAMER_ibm-data-science_ibm_FTCOF_professional-certificates_country-US-country-CA-pmax-NRL-greater-than-14d&campaignid=20000938692&adgroupid=&device=c&keyword=&matchtype=&network=x&devicemodel=&adposition=&creativeid=&hide_mobile_promo&gclid=Cj0KCQjw6cKiBhD5ARIsAKXUdyaRXfHAQTcPBpDGPiwm5wc2tUi2zgF7_THM9oKAovwSraNblF3WMiIaAtcOEALw_wcB>

The "Deep Learning Specialization" offered by deeplearning.ai on Coursera is a comprehensive series of courses designed to provide a strong foundation in deep learning. While I don't have access to the specific syllabus of each course within the specialization, I can provide you with a general overview of the topics typically covered:

Course 1: Neural Networks and Deep Learning

* Introduction to deep learning and neural networks.
* Basics of logistic regression and gradient descent.
* Activation functions and forward propagation.
* Backpropagation and parameter tuning.
* Building deep neural networks and their applications.
* Introduction to hyperparameter tuning and regularization.

Course 2: Improving Deep Neural Networks: Hyperparameter Tuning, Regularization, and Optimization

* Practical aspects of deep learning, including initialization, regularization, and optimization.
* Hyperparameter tuning and validation sets.
* Batch normalization and programming frameworks (TensorFlow and Keras).
* Optimization algorithms (e.g., gradient descent, RMSprop, Adam).
* Hyperparameter tuning, regularization, and optimization techniques.

Course 3: Structuring Machine Learning Projects

* Strategies for improving deep learning models.
* Error analysis and bias/variance analysis.
* Understanding the various components of a machine learning project.
* Case studies on deep learning projects.
* Evaluation metrics and how to prioritize different tasks in a project.

Course 4: Convolutional Neural Networks (CNNs)

* Introduction to convolutional neural networks and their applications.
* Classic networks (e.g., LeNet-5, AlexNet, VGG).
* Deep learning frameworks for CNNs.
* Case studies on object detection, face recognition, and neural style transfer.

Course 5: Sequence Models

* Introduction to recurrent neural networks (RNNs) and their applications.
* Understanding LSTMs and GRUs.
* Deep learning frameworks for sequence models.
* Case studies on speech recognition, music generation, and sentiment analysis.

**LEVEL 3**

The "DevOps Foundations" course by LinkedIn Learning provides an introduction to the fundamentals of DevOps. While I don't have access to the specific syllabus of the course, I can provide you with a general overview of the topics typically covered in a DevOps Foundations course:

LINK: https://www.linkedin.com/learning/topics/devops-foundations

1. Introduction to DevOps:
   * Understanding the origins and principles of DevOps.
   * Exploring the benefits and goals of implementing DevOps practices.
   * Recognizing the challenges and common misconceptions surrounding DevOps.
2. DevOps Culture and Collaboration:
   * Building a collaborative and cross-functional team culture.
   * Fostering communication and collaboration between development, operations, and other stakeholders.
   * Implementing agile methodologies and DevOps practices in software development.
3. Continuous Integration and Continuous Delivery (CI/CD):
   * Automating the software build, test, and deployment process.
   * Setting up and configuring a CI/CD pipeline.
   * Implementing version control and continuous integration practices using tools like Git and Jenkins.
4. Infrastructure as Code (IaC):
   * Introduction to IaC and its benefits.
   * Using configuration management tools like Ansible, Puppet, or Chef to automate infrastructure provisioning and configuration.
   * Managing infrastructure and deployments using cloud platforms like AWS, Azure, or Google Cloud.
5. Containers and Container Orchestration:
   * Introduction to containerization using technologies like Docker.
   * Container orchestration platforms like Kubernetes for managing containerized applications at scale.
   * Deploying and scaling applications using containerization and orchestration tools.
6. Monitoring, Logging, and Incident Management:
   * Implementing effective monitoring and logging strategies.
   * Setting up alerts and notifications for proactive incident management.
   * Employing troubleshooting techniques to identify and resolve issues in a timely manner.
7. Security and Compliance:
   * Understanding security considerations and best practices in DevOps.
   * Incorporating security measures into the development and deployment process.
   * Ensuring compliance with relevant regulations and standards.