Elevate Labs

Cyber Security Internship : Aug 04, 2025

Interview Questions:

1. What is an open port? → *backdoor into the environment (in cloud always)
   - s/w defined value : n/w (TCP/IP) endpoint → source / destn port (packet sent)

2. How does nmap perform a TCP SYN scan?
   - TCP SYN packet to Port 80
     - → open: TCP SYN/ACK packet → connection
     - close: host → RST packet → RST (reset the connec)

3. What risks are associated with open ports?
   - potential entry point:
     - unauthorized access → RDP connec: ransomware payload
     - to bypass firewalls. → DOS attack
     - → SQL injection
     - → intercept email traffic.

5. How can open ports be secured?
   - Access via VPN
   - MFA
   - Implement n/w segmentation.

Hands on Machine learning with Scikit Learn, Keras, and TensorFlow :

1. Linear regression:
   - to find optimal parameters w/o iterative training.
     - expensive for large datasets.

2. Gradient Descent:
   - → Mini-batch: A balance
   - Batch: Uses whole dataset (slower but stable)
   - Stochastic: one example @ a time (faster but noisier)

3. Polynomial Regr:
   - curves to data by adding polynomial terms to the model.
   - How training + validation errors → change with dataset size

4. Regularized linear models:
   1. Ridge regr: L2 regul → prevent overfitting
   2. Lasso: L1 regul → eliminate feature.
   3. Elastic net: L1 + L2
   4. Early stopping: before overfitting begins.
      - train