

Farhat R. Ahmed

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Objective

As a computer engineering undergrad at UCSD, I am seeking internships to contribute and expand my technical skills in a practical industry setting.

Education

Bachelor of Science in Computer Engineering

University of California San Diego | San Diego, CA

Expected Graduation Date: 12/2025

- current GPA: 3.9, 182/196 credits

Relevant courses taken:

- **CSE:** Advanced Data Structures, Design and Analysis of Algorithms, Computer Organization and Computer Programming, Engineering Computation/C Introductory Programming Class, Software Tools and Techniques Laboratory, Software Engineering, Digital Systems
- **ECE:** Introduction to Analog Design, Components and Circuits Laboratory, Circuits and Systems, Linear Systems Fundamentals, Digital Circuits, Advanced Digital Design Project
- **Math:** Mathematics for Algorithms and Systems, Engineering Probability and Statistics, Linear Algebra, Calculus and Analytic Geometry, Discrete Mathematics, Differential Equations
- **Electives:** ML Learning Algorithms, Introduction to Artificial Intelligence, Parallel Computing(OpenCL), Deep Learning/Applications(PyTorch)

Folsom High School | Folsom, CA 05/2022

- weighted GPA - 4.40/4.00, 1580 SAT (800 Math/780 English)

Work Experience

Paid Internship at UCSD ATI| 07/2024 - present

- Enhanced functionality of the Perl based UCSD ATI(Academic Technology Innovation) stuacct database api, which handles student course provisioning.
- Implemented smoother testing of airflow DAGs which manage workflow orchestration by utilizing pytest unit test module to mock configurations
- Designed tests to validate functionality of Python EKS Docker Images
- Integrated Splunk Logging with stuacct database api
- Handled tickets solving a wide array of issues affecting UCSD DSMLP(Data Science and Machine Learning) Platform users

Research Assistant at SEE Lab | 07/2025 - present

- Contributed to SEE lab sponsored by key industry players like Intel, Google, Microsoft, Qualcomm, Oracle
- Expanded existing HDC (Hyperdimensional Computing) algorithm Hyper-Spec developed by UCSD researchers
- Using Lovain algorithm, implemented Incremental Clustering for protein spectral data to efficiently incorporate new data into clustering analysis

Paid Internship at UCAR/NCAR| 06/2023 - 10/2023

(federally funded atmospheric research facility)

- Automated network processes through Python scripting to improve network efficiency

- For easier maintenance of UCAR's network database, revamped existing database 'Portlist' built on Perl by combining Python and AKIPS(network monitoring software)
- Collaborated in creating a program from scratch to check the state of UCAR's out of band network(backup to main network)
- Enabled simpler configuration for UCAR's land-lines by converting existing configuration file format(SCCP) to MGCP format through Python file parsing
- Enhanced login efficiency by automating SSH key validation to consolidate device keys in a global file
- Simplified Ansible playbooks that update Cisco and Juniper accounts to call a single accounts file
- To ensure idempotency, simplified NTP/ACL setup and config fetching playbooks using native Ansible modules to replace issuing raw commands

Projects

Face Image Age Detector: Deep Learning Project | 01/2025 - 03/2025

- Using Pytorch, created convolutional neural networks to predict age range based on Kaggle dataset of face images
- Employed VGG-16, DenseNet, ResNet, and Inception convolutional neural networks

IEEE UCSD Quarterly Project | 04/2024 - 06/2024

- With a team of fellow students, built a flask based app displaying all current campus events in a single unified environment
- Utilized selenium to scrape club instagrams with Jupyter Notebook Python scripts

Triton Mates: Software Engineering Course Group Project | 09/2024-12/2024

- built a web app using Node Js/React/Firebase for roommates to coordinate tasks and resolve conflicts with a fun points system encouraging participation
- Designed and implemented the backend of critical aspects like roommate task components, event components, points, userprofiles, and conflict resolution wizard.
- Took initiative in facilitating technical discussions and completing stalled tasks

Problematic Internet Use Predictor: Machine Learning Project | 09/2024-12/2024

- Preprocessed Kaggle Dataset by imputing random values for null values, removing excessively null features
- Predicted Internet Severity Impairment Index (SII) using Linear Regression and Random Forest models with hyperparameter tuning

Deep Learning with Neural Networks with PyTorch

Coursera Certificate | 06/2024

- Covered Topics: Logistic Regression/Convolutional Neural Networks, Batch Normalization, Dropout, Xavier Method, Gradient Descent

Leadership Skills

- At **UCAR**, I worked in the NETS team with both student interns and full-time network engineers where I showed initiative in developing innovative approaches to solve challenging problems of the expansive UCAR network
- **UCSD ATI**, I worked with a team of student and full-time developers where I leveraged my versatile experience to solve diverse problems in databases handling student course information

Technical Skills

Programming Languages

- Java, Python, Perl, C, C++, C#, Javascript, YAML, Assembly

Software

- Android Studios, Visual Studios, Cisco Packet Tracer, Computer Vision/EOCV, Motion Profiling, Linux Terminal, AKIPs Networking Monitoring, Ansible, MATLAB, Jupyter Notebook, Selenium, Pytest, Junit, Emacs, PyTorch, Perl DBI, Docker, scikit-learn, Firebase, React, Verilog

Networking Skills (CyberPatriots and UCAR)

- Configuring routers/switches, IPv4 and IPv6 addressing/routing, ACL Firewalls, VLANs, Inter-VLAN routing, OSPF, DHCP, NAT, SSH protocols, SNMP, CDP, LLDP, DNS, automating shell commands, NTP, ACL