

Omar Elamri

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PROFESSIONAL SUMMARY

Versatile, young software developer with a passion for networking with years of experience in agile software development methodologies, computer networking technologies, and project management techniques.

EDUCATION

University of California, Los Angeles (UCLA) Expected June 2025
M.S. Computer Science

University of California, Los Angeles (UCLA) Graduated Cum Laude, June 2024
B.S. Computer Science, *Technical Breadth in Mathematics, Electrical Engineering* **GPA 3.93**
Coursework: Compilers, Operating Systems, Algorithms, Data Structures, Networking, Machine Learning, Computer Architecture, Probability

WORK EXPERIENCE

University of California, Los Angeles (UCLA) Los Angeles, CA
Teaching Assistant March 2024 - Present

- Led discussions for over 20 weeks for UCLA’s computer networking class under Professors Lixia Zhang, George Varghese, and Tianyuan Yu.
- Created high quality, educational materials teaching network sockets, cryptography, and routing that 95% students found helpful.
- Rolled out a reliable transport and security project single handedly over multiple quarters: creating a complex testing suite with Docker.
- Mentored over 300 students individually during office hours; helping students with low level C/C++ code and network tech e.g. TCP, BGP.

The World Bank Los Angeles, CA
Research Assistant July 2023 - February 2024

- Applied advanced AI/ML technologies (BART, SVM, TF-IDF, LLMs) to automate NLP research analysis, improving data processing efficiency.
- Optimized algorithms to enhance information extraction, providing actionable insights for policy decisions.
- Displayed leadership skills as the PM of a 4-member team, communicating with Dr. Graeme Blair and the UCLA research team.

Walleye Capital Plymouth, MN
Part-Time Software Engineer June 2022 - May 2023

- Contributed to Walleye’s Deephaven DB system by developing and incrementally delivering 5 widgets using IntelliJ and Java Swing.
- Proposed and implemented the modernization of Walleye’s Trading Desk’s tools, leading to a 10% increase in trader satisfaction.
- Created a command-line app that seamlessly integrated Microsoft Teams with RingCentral SMS, simplifying communication for employees.

TECHNICAL SKILLS

Software Engineering: Languages: Swift, Python, Haskell, C, C++, Java, JavaScript, Rust, Groovy; Frontend: Astro, React, Next.js, Tailwind; Backend: PM2, Node.js, MongoDB, GCP, Azure, AWS, Docker
Machine Learning/Data Science: Jupyter, NumPy, Pandas, SciKit-Learn, PyTorch, TensorFlow, Keras, HuggingFace, LangChain, Matplotlib

PROJECTS

IPMock September 2024 - January 2025

- Created a collaborative, decentralized, peer-to-peer workspace over the global internet—working on up to 100 distributed devices at once.
- Implemented a complex signalling protocol for peers to discover each other using WebRTC, DTLS, and SCTP.
- Handled asynchronous collaboration by facilitating conflicts using CRDT software such as Y.js—constructing a state vector sync protocol.

Training Rabbits with Reinforcement Learning February 2024 - March 2024

- Applied Reinforcement Learning policies such as DQN and PPO to train an agent to play complex decision games.
- Utilized the OpenAI Gym, PyTorch, and Tensorboard to train the agent for over 1 million iterations, achieving a win rate of 88%.

Formal Verification of Compiled Binaries January 2024 - March 2024

- Spearheaded a project utilizing the angr platform for formal verification on over 50 compiled binaries.
- Utilized symbolic execution and z3 SMT solver, resulting in the detection of vulnerabilities and proof of program correctness.

FoodScoop January 2023 - March 2023

- Built a full-stack, React Native application that presents UCLA dining info in a user-friendly manner, enhancing the student dining experience.
- Streamlined deployment to Google Cloud Run with automated continuous integration/testing frameworks and auto-deploy scripts.
- Displayed leadership skills as the PM of a 4-member team, effectively distributing tasks and ensuring timely project completion.

MISCELLANEOUS

Languages: Proficient in Arabic and French
Activities: Psi Beta Rho (division of ACM Cyber), *Member*, Upsilon Pi Epsilon (CS Honors), *Member*