

Sepehr Rafiei

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EDUCATION

University of California, Berkeley: College of Engineering

December 2024

Bachelor of Science: Electrical Engineering & Computer Science

Relevant Coursework: | Algorithms | Data Structures | Python Programming | Java Programming | Computer Architecture | Database Management | Computer Security | IOS Development | Full-Stack | Server-Side Development using PHP | Client-Side Web Development | Machine Learning | Artificial Intelligence | Discrete Mathematics and Probability Theory |

PROFESSIONAL EXPERIENCE

Novikov Beverly Hills

Beverly Hills, CA | December 2024 – January 2025

Freelance Software Developer

- Delivered a custom software tool for **summarizing** and **analyzing** customer reviews from Yelp and Google Maps.
- Integrated **APIs** to extract review data and implemented **GPT API** for advanced summarization and actionable improvement suggestions tailored to the restaurant's needs.
- Provided concise insights for management, identifying recurring customer concerns and improving operational decision-making.
- Achieved over **80%** reduction in manual review processing time through **automation**.

Alcatel-Lucent Enterprise

Calabasas, CA | October 2021 – August 2022

Software/Network Engineer (Internship)

- Developed a **full-stack** web application to virtualize connections within a network-switch topology.
- Built a Windows application using **C#** and **Microsoft SQL** Server to maintain shipments and product inventory.
- Created a **Python** and **C#** library for **serial** and **SSH** communication to an OmniSwitch™.
- Assisted with **QA** and maintained switch topologies.

Ventura County Community College District

Moorpark, CA | September 2021 – May 2022

Head Teaching Assistant

- Tutored over **100** students in **Java**, **C++**, and **Python**, enhancing their coding skills and significantly improving their exam performances through personalized instruction and custom learning resources.

PROJECTS

A Secure File Sharing System

Berkeley, CA | November 2023

- Built a **Go**-based system using **AES-GCM** and **RSA** to ensure end-to-end file **confidentiality**, **integrity**, and **authenticity** in an untrusted database.
- Engineered tamper detection and fine-grained access control to safeguard user data against unauthorized modifications.
- Passed **100+** adversarial test cases without compromise, demonstrating robust defense against advanced attack vectors.

Optimized Convolutions

Berkeley, CA | June 2023

- Developed a **C** program to compute 2D convolutions, focusing on **memory efficiency** and **cache utilization**.
- Accelerated processing by integrating **OpenMP** (multi-threading), **SIMD** (vectorization), and **OpenMPI** (distributed computing).
- Realized an **8x speedup**, significantly **cutting execution time** for image and signal-processing tasks.

NGordnet

Berkeley, CA | April 2022

- Built a **scalable** backend in **Java** to **visualize** historical word usage trends using Google NGrams and WordNet data.
- Optimized query handling by **30%**, enabling real-time responses for datasets with over **50 million** word instances.
- Provided an interactive interface that revealed semantic relationships and historical evolution of language.

YouTube SafeGuard (Cal Hacks 9.0)

San Francisco, CA | October 2022

- Led a team of three** to develop a Chrome Extension that filters YouTube comments in real time, allowing users to hide spam or negative content.
- Integrated **Cohere's NLP APIs** to classify comments quickly and accurately, enhancing content moderation and user experience.
- Implemented a **Django REST API** for streamlined data flow and authentication, enabling a seamless, scalable front-end/back-end architecture.

SKILLS

Programming Languages: Python, SQL, Java, C++, C, JavaScript, Go, C#, Kotlin, Swift, PHP, HTML, CSS, Bash, NASM

Library and Frameworks: Flask, Django, Selenium, Requests, Pandas, NumPy, Node.js, Express.js, React, Bootstrap, jQuery

Tools: Git, AWS, Google Cloud Platform (GCP), Docker, Conda, MongoDB, Firebase, Postman, Figma

Backend Development: API design, Microservices architecture, Database design and optimization, RESTful API development, GraphQL

Performance Optimization: Multithreading, SIMD, Distributed Computing, Memory Optimization

Testing & Debugging: Unit Testing, Integration Testing, Debugging tools (e.g., gdb, Valgrind)

Languages: *English & Persian (Farsi)* – fluent; *Mandarin Chinese* – limited