SEPEHR RAFIEI

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EDUCATION

University of California, Berkeley: College of Engineering   Berkeley, CA | 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 and Server-Side Development using PHP, Client-Side Web Development, Machine Learning, Artificial Intelligence, Discrete Mathematics and Probability Theory.

SKILLS

Programming Languages: Python, JavaScript, TypeScript, Java, C++, C, Go, C#, Kotlin, Swift, PHP, SQL, HTML, CSS, Bash
Libraries/Frameworks: React, Node.js, Express.js, Flask, Django, FastAPI, Selenium, Requests, Pandas, NumPy, Tailwind CSS
Tools: Git, Linux/Unix, Docker, AWS, Google Cloud Platform (GCP), Conda, MongoDB, Firebase, Postman, Figma
Backend Development: REST APIs, Microservices, GraphQL, Serverless, Caching, Auth, Database design & optimization
Testing & Debugging: Unit Testing, Integration Testing, Test-Driven Development (TDD), debugging tools (e.g., gdb, Valgrind)
Performance Optimization: Multithreading, SIMD, Distributed Computing, Memory Optimization
Languages: English & Persian (Farsi) – fluent; Mandarin Chinese – limited

PROFESSIONAL EXPERIENCE

Novikov Beverly Hills   Beverly Hills, CA | Dec 2024 – Jan 2025
Freelance Software Developer
- Delivered a robust review summarization platform featuring a **React** frontend and a **FastAPI** backend to analyze Yelp and Google Maps data.
- Integrated **GPT API** for AI-driven insights, generating actionable recommendations tailored to the restaurant's operational needs.
- Achieved an **80% reduction** in manual processing time, empowering management with concise insights to identify recurring concerns and optimize decision-making.

Alcatel-Lucent Enterprise   Calabasas, CA | Oct 2021 – Aug 2022
Software/Network Engineer (Internship)
- Developed a full-stack web application (**React**, **TypeScript**, **Flask**, **PostgreSQL**) to virtualize network-switch topologies, replacing manual Visio diagrams and enabling real-time connection insights.
- Built a **C#** Windows application with **Microsoft SQL Server** to streamline inventory and shipping, eliminating paper-based tracking and improving operational oversight for thousands of switches.
- Created custom **Python** and **C#** libraries for automated serial/SSH communications, reducing manual data entry by enabling one-click device logging and rapid configuration.

PROJECTS

A Secure File Sharing System   Berkeley, CA | November 2023
- Developed a robust **Go**-based backend system employing **AES-GCM** and **RSA** encryption to guarantee end-to-end file confidentiality, integrity, and authenticity within an untrusted database environment.
- 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.

Personal Portfolio Website   Berkeley, CA | November 2024
- Built a responsive site using **React JS**, **Vite**, **Node**, and **TypeScript** by refactoring code into modular components.
- Implemented light and dark mode switching to enhance user experience.
- Managed version control with **GitHub** and deployed on **Netlify** for streamlined updates.

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 **200,000** word instances.
- Provided an interactive interface that revealed semantic relationships and the historical evolution of language.

YouTube SafeGuard (Cal Hacks 9.0)   San Francisco, CA | October 2022
- Developed an interactive **Chrome Extension** front end to filter YouTube comments in real time, focusing on sleek **UI/UX** and dynamic **DOM** updates.
- Integrated **Cohere's NLP APIs** for rapid, accurate comment classification, elevating content moderation and user satisfaction.
- Leveraged a **Django REST API** for efficient data flow and authentication, ensuring a smooth and scalable front-end/back-end experience.

Optimized Convolutions   Berkeley, CA | May 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.