

Gaurav Kumar

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EDUCATION

University of California, Los Angeles (UCLA)

Expected Jun. 2027

Bachelor of Science, Computer Science and Engineering | GPA: 3.9

- **Relevant Coursework:** Data Structures & Algorithms, Relational Database Concepts, Software Construction, Operating Systems, Machine Learning, Computer Vision, Computer Architecture, Computer Networking, Computer Security
- **ACM TeachLA:** Developed **React web apps** using **Agile** development practices (SDLC) to teach coding to K-12 students

EXPERIENCE

Amazon Web Services (AWS)

Jun. 2026 – Sept. 2026

Software Development Engineer Intern

Palo Alto, California

- Built a deduplication feature for OpenSearch k-NN that removed redundant vectors across both CPU and GPU index builds, cutting index size **50% on memory** usage and **66% on merge I/O** with no loss in search accuracy (#3526).
- Optimized compressed vector index handling to skip unnecessary index-building steps for small datasets, reducing segment indexing by **45%**. Merged to open source (#3306) and backported into **Amazon OpenSearch Serverless**.
- Fixed a critical crash in **OpenSearch's k-NN** (FAISS scalar quantization) that broke index builds on production clusters due to faulty vector compression and shipped a two-part fix that merged to main (#3381).
- Worked on the Vector Search team, which powers similarity search for **AI/ML** use cases like semantic search, embeddings retrieval, and **RAG** pipelines for LLM applications.

Property Risk Profile (PRP)

Aug. 2023 – Aug. 2025

Software Engineer (Part-Time)

Petaluma, California

- Automated real estate disclosure document reviews using **Python**, **pdfplumber**, and engineered **GPT-4** prompts to parse and flag context-dependent risks, generating summarized reports and reducing manual review time by **80%**.
- Architected a property view scoring system in **Python** using **YOLO** for image segmentation to classify scene features (ocean, trees, sky, buildings), scoring each view through a configurable weighted matrix based on user preferences.
- Defined product roadmap and technical specifications for automated property risk evaluation, enabling development of **5+ software modules**; managed relationships and coordinated development with outsourced software team.
- Supervised and mentored **2 interns**, strengthening their technical skills and improving team productivity.

PROJECTS

ClubApply.ai | Python, React.js, AWS Bedrock, FastAPI | [GitHub](#), [Demo](#)

Apr. 2026

Won 1st Place @ Bruin AI X AWS Generative AI Hackathon

- Built a web app that helps students tailor club applications, refine responses, and prepare for coffee chats/interviews.
- Integrated **AWS Bedrock** for LLM-powered feedback/response generation, deployed via **FastAPI** and **React.js**.

DIDUC | TypeScript, React.js, Express, MongoDB | [GitHub](#)

Jan. 2026

- Built a cross-platform social media mobile app (React Native + **Expo**) where users can easily see shared memories.
- Engineered backend infrastructure with **Express**, **MongoDB**, and **Firebase** for authentication and cloud storage, designing API endpoints and data models to manage event-photo-user relationships at scale.

Resume Management System | Django, SQLite, React.js, Tailwind CSS, TypeScript | [GitHub](#)

Oct. 2025

USC AI Hackathon

- Developed an interactive **AI-powered resume management platform** enabling users to visualize job applications, tailor resumes intelligently using GPT-based models, and track their resumes.
- Built **Django REST APIs** for user authentication, company/job data models, and resume file management.

Spy Gadget, Software Lead | Node.js, React.js, MQTT, Socket.IO | [GitHub](#)

Aug. 2025

UCLA HACK Competition

- Developed React.js web app to display real-time visualization of wearable sensor data with **<200ms latency**.
- Integrated hardware devices (hat & watch) to stream image and sensor data, enabling **real-time web monitoring**.
- Leveraged **OpenAI API** to interpret clues, allowing the team to solve the simulated escape room heist.

SKILLS

- **Languages:** Python, C++, C, Java, JavaScript, TypeScript, HTML/CSS, SQL, Assembly
- **Frameworks & Libraries:** React, Next.js, Node.js, Django, Express, FastAPI, NumPy, PyTorch, Matplotlib, Spring Boot
- **Tools & Technologies:** Git, GitHub, AWS, MongoDB, MySQL, SQLite, Docker, JavaFX, Claude Code, Cursor, Codex