

# PRAMIKA GARG

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## EDUCATION

### Vellore Institute of Technology

Bachelor of Technology in Computer Science & Engineering, **GPA: 8.8/10 · 3.91/4.0**

Sep 2020 – Jul 2024

Vellore, India

- **Merit Scholarship:** Ranked Top 10 / 2100 for 2 consecutive years.
- **Executive Board:** ACM / ACM-W VIT - Finance Head / Outreach Head.
- **IEEE VIT:** Senior Technical Committee Member · **MFC VIT:** Technical Committee Member.

## EXPERIENCE

### Qualcomm

Software Engineer I

Aug 2025 – Present

Hyderabad, India

- Engineered a **GenAI diagram-generation platform (Claude LLM + Docker + Kubernetes)** deployed to an engineering base of **10K+ users**; streamlined flows to drive a **30% reduction** in technical documentation time & coordinated rollout with Engineering, and QA.
- **Orion Award recipient** for leading **ETL pipeline migration** and co-developing an **AI-driven Regression Change Detector**, enhancing CI/CD traceability and boosting platform reliability.
- Owned **full-stack backend development** for multiple services in **Java**, conducting peer code reviews and enforcing **scalable architecture patterns** for the team.

### Qualcomm

Associate Software Engineer

Jul 2024 – July 2025

Hyderabad, India

- Migrated **ETL pipeline** to distributed **RabbitMQ + MySQL** (metadata only), guiding cross-team adoption; introduced multi-worker processing and back-pressure scheduling, scaling throughput **1 TB to 10 TB/day** and eliminating Jenkins bottlenecks.
- Architected IoT load-simulation system on **AWS EKS + Kafka**, generating traffic for **250K+ devices** across 40+ teams; introduced adaptive partition balancing, cutting message latency by **40%**.
- Built **self-healing infrastructure** with automated reset logic and unified **Splunk/Grafana observability**; auto-recovered **93% of failures**, reducing incident resolution time by 30% and improving IoT device capacity **6x per host**.
- Developed unified OPA-based access control system in **Kubernetes** across **23+ APIs**; reduced misconfigurations by **65%** and streamlined secure onboarding for engineering teams.
- Designed and deployed **FastAPI + SQLAlchemy Proxy SQL gateway** for **5K+ concurrent clients**; implemented **KEDA-based autoscaling**, achieving **99.9% uptime** for parallel test workloads.

### GE Aerospace

Software Development Engineer Intern

Jan 2024 – Jun 2024

Bengaluru, India

- Engineered a dynamic **Playwright based automation framework** for the Engine Change Tool, covering **40+ complex flows**; implemented logic to validate variable resultant data states, ensuring stability across diverse fleet scenarios.
- Optimized asset transfer workflows by eliminating manual validation loops, resulting in a **~95% reduction** in processing errors and saving **583 man-hours annually** for the support team.
- Collaborated with cross-functional QA teams to document workflows and validation logic, facilitating smooth knowledge transfer and accelerating feature delivery within an **Agile environment**.

### Expedia Group

Software Development Intern - Flights

May 2023 – Jul 2023

Gurgaon, India

- Built from scratch a configurational **Maestro based framework**, with **30+ toggles**, covering the entire scope of user touch story for **Flights LOB**.
- Developed the complete suite of **UI and Flow based Test Cases** for the most used LOB in Expedia (i.e. Flights) which at a later stage we turned into a **Synthetic test suite** to monitor downtime of app specific APIs.
- Scaled solution across to **4 Business Units**, built comprehensive UI tests, enabling **5X faster test case development**, and enabling auto regression and synthetic testing made easily deployable via **GitHub Actions**.
- Worked on both **iOS And Android** code bases to build **Accessibility Identifiers** to make UI elements much more accessible and easy to implement in UI Test Cases.

### EPFL (Swiss Federal Institute of Technology)

Summer Research Scholar - Scalable Computing Systems Lab (SaCS Lab)

May 2022 – Jul 2022

Lausanne, Switzerland

- Selected among the **top 2%** of global applicants for a fully funded fellowship to conduct **federated machine learning experiments** focused on distributed deep learning under resource constraints.
- Designed training loops and simulation pipelines to evaluate model performance on **heterogeneous data**; implemented **lightweight pre-processing** to mitigate bandwidth bottlenecks in realistic network environments.
- Optimized aggregation strategies and communication frequency, achieving an **18% improvement in convergence speed** and reducing mean network communication overhead by **23.2%**.

### The D. E. Shaw Group

DESI S Ascend Educare Fellow

Oct 2021 – May 2022

Remote

- Selected as one of **40 fellows** from a pool of **6,200+ applicants (Top 0.65%)** for an exclusive 6-month mentorship program; received weekly technical guidance from senior DESIS engineers.
- Developed a fully fledged **Recruitment Content Management System (CMS)** in **Node.js**, designed to streamline candidate tracking and automate application workflows.
- Led a team of 4 to architect and build **FinEfy**, a novel **fintech product** designed to revolutionize financial independence for home-makers; built the **backend infrastructure** and presented the MVP to firm leadership.

## RESEARCH PUBLICATIONS

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|---|----------|
| <b>NOTE:</b> All publications are <i>double-blind peer-reviewed</i> .   |          |
| <b>IEEE: 4<sup>th</sup> ICUIS, 2024</b>   iOS, ARKit, VisionOS   <b>Cited by 1</b> ⚡  | Dec 2024 |
| <i>Inventory Management in Augmented Reality Using Apple ARKit for VisionOS</i>   |          |
| <b>IEEE: GCCIT, 2024</b>   Blockchain, NFTs, Smart Contracts ⚡  | Oct 2024 |
| <i>Leveraging BBTS and NFTs for Ethical Ticketing in Live Events</i>  |          |
| <b>IEEE: 7<sup>th</sup> CSI-TSS, 2023</b>   Python, MNE, Signal Processing   <b>Cited by 6</b> ⚡                              | Nov 2023 |
| <i>Harnessing Creative Methods for EEG Feature Extraction and Modeling in Neurological Disorder Diagnoses</i>                 |          |
| <b>IEEE: 7<sup>th</sup> CSI-TSS, 2023</b>   1 <sup>st</sup> Author   Python, OpenCV, Dark Channel Prior   <b>Cited by 1</b> ⚡ | Nov 2023 |
| <i>Enhancing Visibility: Multiresolution Dark Channel Prior for Dehazing and Fog Removal in Images</i>                        |          |
| <b>IEEE: 4<sup>th</sup> ICRTCST, 2021</b>   1 <sup>st</sup> Author   Python, ML Models   <b>Cited by 1</b> ⚡                  | Feb 2022 |
| <i>An Exhaustive Comparative Analytical Study of 15 Machine Learning Models For Automated Cardiovascular Disease...</i>       |          |
| <b>Springer: ICICIT, 2021</b>   1 <sup>st</sup> Author   Python, Algorithms, Parallel Computing   <b>Cited by 2</b> ⚡         | Jan 2022 |
| <i>Randomised analysis of backtracking-based search algorithms in elucidating sudoku puzzles using a dual...</i>              |          |

## HONORS & AWARDS

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| <b>Qualcomm</b>   Orion Award  | Aug 2025    |
| Awarded for exceptional impact leading to early promotion.                               |             |
| <b>EPFL</b>   Summer Research Scholarship ⚡  | May 2022    |
| Awarded 3,600 CHF funding; Selected Top 2% of global applicants.                         |             |
| <b>Google</b>   Generation Scholarship (APAC) ⚡  | Apr 2022    |
| Awarded \$1,000 USD; Selected Top 180 / 20,000+ applicants ( <b>Selectivity: 0.9%</b> ). |             |
| <b>Harvard University</b>   WECode Scholarship ⚡   | Mar 2022    |
| Selected Top 250 / 5,000+ applicants ( <b>Selectivity: 5%</b> ).                         |             |
| <b>Vellore Institute of Technology</b>   Merit Scholarship ⚡                             | 2020 – 2022 |
| Ranked Top 10 / 2,100+ students for 2 consecutive years.                                 |             |
| <b>The D. E. Shaw Group</b>   DESIS Ascend Educare Scholarship                           | Oct 2021    |
| Awarded INR 50,000 stipend.  |             |
| <b>American Express</b>   AI/ML Hackathon  | Oct 2021    |
| Ranked 6 <sup>th</sup> / 1,385 participants (Individual Track).                          |             |
| <b>SUSE (CNCF)</b>   Cloud Native Scholarship ⚡  | Jun 2021    |
| Selected Top 325 / 15,000+ applicants ( <b>Selectivity: 2%</b> ).                        |             |

## PROJECTS

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|---|---------------------|
| <b>Digital Portfolio</b>   HTML, CSS, JavaScript ⚡  | Jun 2025 - Nov 2025 |
| • Designed and developed a <b>responsive portfolio</b> with custom animations, starfield background, and <b>smooth scroll transitions</b> . |                     |
| • Built with <b>vanilla HTML/CSS/JS</b> without any frameworks, fully accessible with <b>semantic markup</b> and ARIA labels.               |                     |
| <b>Parsify</b>   Python 3, POSIX, Shell ⚡   | Jan 2025 - Sep 2025 |
| • A logical parser of the <b>POSIX standard</b> (IEEE Std 1003.1-2017) subset - Shell Token Recognition rules.                              |                     |
| • Implements Section 2.3 of the <b>Shell Command Language</b> chapter, covering the unified <b>POSIX.1 Shell and Utilities</b> interface.   |                     |

## SKILLS

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| <b>Languages:</b> Java, Python, Swift, JavaScript, SQL, L <sup>A</sup> T <sub>E</sub> X  |
| <b>Cloud &amp; DevOps:</b> AWS, GCP, Kubernetes, Docker, EKS, Terraform, CI/CD, Linux, Splunk, Grafana, Git                            |
| <b>Backend &amp; Databases:</b> SpringBoot, FastAPI, Node.js, RabbitMQ, Kafka, MySQL, PostgreSQL                                       |
| <b>AI/ML:</b> TensorFlow, OpenCV, Federated ML, LLMs, Jupyter, Tableau, Data Analytics   |
| <b>Mobile &amp; Testing:</b> iOS SwiftUI, XCode, Maestro, Playwright, Nightwatch.js, UI Automation, Test Automation                    |
| <b>Leadership &amp; Soft Skills:</b> Technical Leadership, Mentorship, Cross-functional Collaboration, Agile/Scrum, Strategic Planning |

## CERTIFICATIONS

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| <b>JP Morgan Chase</b>   Software Engineering Virtual Experience ⚡         | Sep 2021 |
| <b>Postman</b>   Student Expert ⚡  | Aug 2021 |
| <b>Goldman Sachs</b>   Engineering Virtual Program ⚡                       | Jul 2021 |
| <b>Coursera</b>   Fine Tune BERT for Text Classification with TensorFlow ⚡ | Jun 2021 |
| <b>Google</b>   Build and Secure Networks in Google Cloud ⚡                | Nov 2020 |
| <b>Google</b>   Deploy to Kubernetes in Google Cloud ⚡                     | Nov 2020 |
| <b>Google</b>   Insights from Data with BigQuery ⚡                         | Nov 2020 |
| <b>Google</b>   Perform Foundational Data, ML, and AI Tasks ⚡              | Nov 2020 |
| <b>Google</b>   Integrate with Machine Learning APIs ⚡                     | Nov 2020 |
| <b>Google</b>   Engineer Data in Google Cloud ⚡                            | Oct 2020 |