

Kunal Mahato

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EDUCATION

Virginia Tech.

Master Of Engineering in Computer Science & Applications - GPA: 3.92 / 4

Virginia, USA

August 2023 - May 2025

Relevant Courses- Software Engineering, Machine Learning, Web Application Development, AI Tools, Cloud Computing.

SKILLS

Programming Languages and Databases: JAVA, Python, C, C++, PostgreSQL, MongoDB, MySQL.

AI & Machine Learning: OpenAI, Applied AI, LLMs (GPT-4, RAG), TensorFlow, PyTorch.

Frameworks and Technologies: React, TypeScript, Javascript, Streamlit, Spring, Node.js, Express, FastAPI, Vault.

Cloud & DevOps: AWS(Lambda, IAM, VPC, Cloudwatch, EC2, S3, EMR, SageMaker, API Gateway), Docker, CI/CD.

Tools & Platforms: Git, Perforce/P4V, Android Studio, Figma, JIRA, IntelliJ, Kibana, UNIX.

WORK EXPERIENCE

Turvo Inc., India | Software Engineer

May 2021 - June 2023

- Enhanced global search and filter efficiency by 10% through advanced Elasticsearch indexing and REST API implementation, improving data retrieval speed and accuracy for supply-chain operations.
- Led the development and integration of a new Intermodal mode, migrating 216k+ shipments via Python scripting, ensuring robust data consistency across MySQL and MongoDB databases.
- Spearheaded reorganization of the Rules Framework with a Business Rule Management System, supporting role-specific shipment locks and mode-based status sequences, thus enhancing system reliability for over 10 clients.
- Eliminated data vulnerabilities for 5 clients by encrypting credentials and storing them in Hashicorp Vault.
- Enhanced customer satisfaction and system performance by optimizing 5 shipment features (cloning, routing, sharing, orders, invoicing) through Agile methodologies.

Samsung, South Korea | R&D Engineer

December 2019

- Worked on UI and Notifications which helped launch the world's first foldable phone at Samsung HQ, South Korea.

Samsung, India | R&D Engineer

June 2018 - April 2021

- Maintained and optimized full-stack codebase for both dynamic UI components and robust back-end systems, enhancing performance for 1.48+ billion devices.
- Improved performance by reducing battery usage and memory consumption by 20%, utilizing Java for back-end and front-end optimizations for low-end devices.
- Handled 5 Application and Framework modules - Settings, Calendar, QuickPanel, Status-Bar and warning notifications.
- Improved the Customer Satisfaction metrics by 10% through implementation of Search feature for Quick Panel.
- Collaborated to develop back-end solutions for data porting, ensuring integration across 20+ network operators.

PROJECTS

Ask Hokie | VTHacks-Hackathon of Virginia Tech.

September 2024

- Built a real-time chatbot using GPT-4-Turbo and React answering over 1,000 student queries with a 95% accuracy rate.
- Integrated MongoDB and PropelAuth with FastAPI, enabling secure, efficient access to diverse university resources.

Book Wonders | Virginia Tech.

January 2024 - May 2024

- Developed a scalable e-commerce app with login, book browsing, cart, and checkout, supporting 1000+ transactions.
- Designed and implemented 10+ responsive pages using HTML/CSS, React SPA, and optimized state management with Context API and Redux, improving load and data flow by up to 30%.
- Built 15+ RESTful APIs in Java (Jakarta EE) with MySQL integration, managing CRUD for 1,000+ book records.
- Deployed on AWS (EC2, S3, RDS, EMR) for processing and scaling, with CI/CD enabling zero-downtime updates.

DoDEx: Winner for People's Choice Hack | Bitcamp-Hackathon of University of Maryland

April 2024

- Built an AI-driven parser with LLM and RAG, gaining 30% validation accuracy improvement on Defense Contract Notices.
- Leveraged web scraping and Elasticsearch for reliable indexing and querying, enabling categorization of contract details like Federal Agencies, Contract Amounts, and Company Names.

Review Me | Virginia Tech.

August 2023 - December 2023

- Developed a MERN-based peer review platform with MVC architecture, fostering collaboration and community building.
- Implemented hashtag search, notifications, upvote/downvote, and comments for tailored content discovery and engagement.
- Attained 95% test coverage with Mocha and Chai for reliable code quality, including unit and acceptance testing.
- Enhanced user experience by 20% through features like post editing, search, notifications, and guest user functionality.
- Implemented secure user authentication using JSON Web Tokens (JWT), ensuring encrypted and stateless communication.