AAYUSH KUMAR JVS

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SUMMARY

- AI/ML and Full-Stack Engineer with 4+ years of experience including leading GIS systems at Apple Maps and web/cloud development at UMBC. Experienced in delivering scalable, production-grade solutions using Vue, AWS, Python, and CI/CD pipelines. Published researcher with specialization in explainable AI.

EDUCATION

- Master of Science - Computer Science
  The University Of Maryland Baltimore County GPA: 3.5   *Aug 2022 – Dec 2024*
- Relevant Courses: Design and Analysis of Algorithms, Advanced Computer Architecture, Principles of Computer Security, Malware Analysis, Data Privacy, Quantum Computing, Service Oriented Computing, Project in Computer Science and Master's Thesis
- Bachelor of Technology - Information Technology
  SRM Institute Of Science And Technology GPA: 3.0   *Jul 2016 – Jun 2020*

EXPERIENCE

- **RMSI Pvt Ltd**
  Software Engineer (GIS) – Contractor to Apple Inc (India)   *Dec 2019 – Aug 2022*
  - **GIS Platform Development** Built a full-stack GIS tool integrated with Confluence and Jira, improving spatial data ops by 35%.
  - **CI/CD Engineering** Designed CI/CD pipelines for Apple Maps' tools, accelerating deployments by 40%.
  - **Team Leadership** Mentored 20+ engineers on production workflows, reducing MTTR by 30%.
  - **TDD Strategy** Championed TDD practices, reducing bugs in production by 40%.
  - **API + SDK Integration** Enhanced GIS tools using internal REST APIs, ArcGIS, FusionX, SDKs, improving ingestion times by 35%.
  - **Automation** Automated repetitive GIS tasks saving 15+ hours/week.

- **UMBC Graduate School**
  Software Developer (Baltimore, MD)   *Feb 2024 – Present*
  - **Full-Stack Dev** Built crem-usa.com using **Vue.JS**, **NUXT**, **AWS**, and **GraphQL**.
  - **Cloud Optimization** Managed AWS **Lambda**, **S3**, and **DynamoDB**, improving cost-efficiency by 20%.
  - **AI Research** Led research on Quantized LLMs for mental health. Published in **ProQuest LLC**.
  - **UX Improvement** Implemented responsive UI and cut load time by 45%.
  - **Cross-functional Work** Collaborated with cognitive science researchers to apply ML insights.

PROJECTS

- Encrypted Peer-to-Peer File Sharing System
  Solo Developer   *Jan 2023 – Mar 2023*
  - **Security Protocols** Built a decentralized encrypted P2P file sharing system using Python sockets and cryptographic primitives.
  - **Custom Protocol** Designed secure channel setup, file chunking, and peer discovery mechanism without centralized server.
- Analysis of Secured Federated Learning
  Research Project   *Apr 2023 – Jun 2023*
  - **Federated Privacy** Explored tradeoffs between performance, privacy, and latency in secure aggregation protocols across devices.
  - **Comparative Benchmarking** Benchmarked PySyft and Flower against simulated hospital datasets for medical image classification.
- Master's Thesis – Quantized LLMs on Mental Health Datasets
  Research Assistant at UMBC   *Feb 2024 – Present*
  - **Model Benchmarking** Benchmarked quantized LLMs (QLoRA, BitsAndBytes, GGUF, GGML) using IMHI datasets to evaluate tradeoffs between compression and accuracy.
  - **Explainability** Assessed performance of quantized models on explainability tasks to understand faithfulness degradation due to lossy compression.

SKILLS SUMMARY

- **Programming Languages** Java, Python, JavaScript, TypeScript, Go, HTML5, CSS3
- **Frameworks and Libraries** PyTorch, VueJS, React Native, Angular, NodeJS, NextJS, Django, TensorFlow, Keras
- **Cloud and DevOps Tools** AWS EC2, AWS S3, AWS Lambda, AWS ECS, AWS RDS, Microsoft Azure, Docker, Kubernetes, Continuous Integration, Continuous Deployment, Git, Apache Kafka
- **Databases and Query Languages** PostgreSQL, MySQL, MongoDB, Redis, Oracle, HiveQL, GraphQL
- **Data Processing and Analytics Tools** Pandas, NumPy, PySpark, Hadoop, FusionX, ArcGIS
- **Data Visualization Tools** Power BI, Tableau, D3.js, Plotly, GIS Mapping
- **Development Methodologies** Agile, Scrum, Test Driven Development, DevOps, Root Cause Analysis