Aryan Prahraj

 LinkedIn   Portfolio   GitHub   aryanprahraj@gmail.com   +1 6463823438   Jersey City, NJ, U.S.A.

PROFILE

Backend and cloud focused Software Engineer with hands on experience building secure and scalable microservices and ML driven platforms in production environments. Proven ability to improve reliability, performance, and system design across backend services. Currently pursuing my Master's in Computer Science with focus on cloud systems, full stack development, artificial intelligence, and machine learning.

EDUCATION

Master of Science - Computer Science, Pace University   Sep 2024 – May 2026 | New York, NY, U.S.A.

Bachelor of Technology - Computer Science and Engineering, SOA University   Jun 2019 – Jul 2023 | Bhubaneswar, OD, India

PROFESSIONAL EXPERIENCE

Software Engineering Intern, Pitney Bowes   Jul 2025 – Oct 2025 | Shelton, CT, U.S.A.

- Resolved more than 100 high severity security vulnerabilities across Spring Boot and WildFly microservices by upgrading dependency stacks including Jackson, SnakeYAML, and BouncyCastle, improving API security and IAM compliance by 30%.
- Standardised dependency management by introducing parent POMs, migrating legacy code to modern libraries, and removing unsupported components, improving long term maintainability and reducing technical debt.
- Containerised and orchestrated more than 10 microservices using AWS ECS, EKS, and Elastic Beanstalk with load balancing, auto scaling, and environment specific configurations, achieving 99% service uptime and reducing deployment latency by 25%.
- Designed and developed secure RESTful APIs using Spring Boot and Hibernate JPA while optimising CI/CD pipelines with Jenkins and GitLab, reducing build failures by 40%, improving deployment speed by 35%, and reducing manual validation effort by 15% through automated testing and monitoring.

Full Stack Developer Intern, OptimEyes.AI   Nov 2023 – Apr 2024 | Pune, MH, India

- Implemented front end features using Angular and backend services using Spring Boot, improving page load speed by 20%.
- Created microservices architecture components with modular containerised deployment, improving deployment efficiency by 24% and reducing downtime.
- Performed end to end testing and debugging, reducing bug incidence by 45% and improving application reliability.
- Collaborated with the project manager in daily sync ups, improving task prioritisation and increasing milestone completion rates by 15%.

Frontend Developer Intern, Youth India Foundation   Nov 2021 – Feb 2022 | Bhubaneswar, OD, India

- Designed and developed visually engaging web interfaces using Canva and Angular, standardising UI components and improving site engagement by 22%, reducing load time by 18%, and increasing user satisfaction by 14%.
- Collaborated with cross functional teams to align design and development workflows, enabling cohesive and timely feature delivery.

SKILLS

- **Languages** - Java, Python, C++, JavaScript, TypeScript, SQL, Go.
- **Frameworks & Libraries** - Spring Boot, Hibernate, JPA, React.js, Angular, Node.js, Express.js, REST APIs, Flask, TensorFlow, Pandas, NumPy.
- **Cloud & DevOps** - AWS (ECS, EKS, Beanstalk, S3, Lambda, EC2, RDS, CloudWatch, VPC), Docker, Jenkins, Maven, Terraform, Docker Compose.
- **Databases** - MySQL, PostgreSQL, MongoDB, Redis, SQLite, Elasticsearch, DynamoDB, Cassandra.
- **Developer Tools** - Visual Studio, Postman, Swagger UI OpenAPI, GitHub, GitLab, Jira, Confluence, Slack, Kubernetes Dashboard.

PROJECTS

VirtualPal, Multi Persona Conversational AI System with Persona Locked Inference Pipelines.

- Engineered a full stack conversational system using Next.js, React, and TypeScript by building a server side inference orchestration pipeline that assembles system instructions and 100% of prior conversation history per request, enforces persona level session isolation across 5 AI personas, and supports real time inference with sub 120 millisecond end to end latency and zero cross session state leakage.
- Designed and implemented a code locked persona framework with more than 900 lines of hierarchical behavioural rules, 18 tiered constraint categories, and pre generation safety keyword scanning, reducing persona drift and over advice by design while enabling stable and emotionally safe interactions across stress support, learning guidance, legal awareness, entertainment, and social use cases.

Guard My Bills, Machine Learning Driven Fraud Detection and Transaction Risk Intelligence Platform.

- Built an Isolation Forest anomaly detection model with more than 30 engineered signals including temporal spending patterns and geo velocity indicators, achieving 98% precision, 93% per call, 0.93 ROC AUC, and a 3.1 times efficiency gain through vectorised preprocessing and batch based inference.
- Deployed the model in a real time machine learning inference pipeline that scores transaction risk and geospatial anomalies at up to 12000 transactions per second with under 90 millisecond latency, enabling a zero sign up privacy first system that improves fraud detection and user financial insight.

SheeEasy, Cloud Native Intelligent Spreadsheet Platform with Natural Language Computation.

- Engineered an AI augmented cloud based spreadsheet platform using Next.js, React, and TypeScript with multi sheet state management and a high throughput computation grid supporting more than 2600 cells, offline first synchronisation, real time autosave, and seamless interoperability with external tools for scalable operation.
- Developed an AI copilot that interprets natural language instructions and executes multi step computations, data transformations, and automated visualisation pipelines with PNG export, reducing manual formula work by 90% and increasing data analysis performance by 10 times.

FreeFlix, Full Stack Movie Discovery Platform.

- Built a full stack movie discovery platform using React, Node.js, Express, and MongoDB by integrating the TMDB and OMDB APIs to deliver real time recommendations across 5 mood categories, more than 10 languages, and a catalogue of more than 1000 titles while maintaining 99% uptime on Render cloud deployment.
- Implemented a secure authentication system using Firebase OAuth and JWT and developed backend services for more than 3000 user profiles, personalised collections, and watch history, reducing authentication time by 60% through optimised Google Sign In handling and supporting concurrent user sessions efficiently.