Aryan Prahraj

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PROFILE

Software Engineer experienced in designing and shipping cloud native backend systems, contributing across the full stack and delivering production ready software through automated workflows. Currently pursuing a Master's in Computer Science focused on AI, ML, and cloud systems.

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, S'O'A 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 100 plus high severity security vulnerabilities across Spring Boot and WildFly micro-services by upgrading dependency stacks including Jackson, SnakeYAML, and BouncyCastle, improving API security and IAM compliance by 30 percent.
- Upgraded existing dependencies and introduced standardised parent POMs, migrating legacy code to support newer libraries and removing unused or unsupported components, while implementing Maven dependency management and hierarchy to improve long term maintainability.
- Containerised and orchestrated 10 plus micro-services using AWS ECS, EKS, and Elastic Beanstalk, implementing load balancing, auto scaling, and environment specific configurations to achieve 99.9 percent service uptime and reduce deployment latency by 25 percent.
- Developed secure, modular RESTful APIs using Spring Boot and Hibernate JPA, optimising CI/CD pipelines using Jenkins and GitLab to reduce build failures by 40 percent and improve deployment speed by 35 percent, while collaborating with DevOps and QA teams to automate testing and monitoring, reducing manual validation time by 15 percent and improving release reliability.

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

- Implemented front-end features with Angular 8+ and back-end services with Spring Boot, improving page load speed by 20%.
- Crated micro-services development architecture components, improving deployment efficiency by 24% and reducing downtime through modular implementation and containerisation.
- Collaborated in daily sync-ups with project manager, enhancing task prioritisation and improving milestone completion rates by 15%.
- Executed comprehensive testing and debugging processes, reducing bug incidence by 30% and improving application reliability.

Front-End Developer Intern, Youth India Foundation — Nov 2021 – Feb 2022 | Bhubaneswar, OD, India

- Designed and developed visually engaging, brand-aligned web interfaces using Canva and Angular while standardising and optimising UI components across platforms, resulting in a 22% increase in site engagement, 18% reduction in load time, and a 14% improvement in user satisfaction post-launch.
- Collaborated with cross-functional teams to synchronise design and development workflows, enabling cohesive feature delivery.

SKILLS

- **Languages** - Java, Python, C, C++, C#, JavaScript, TypeScript, SQL, Go, Rust, Kotlin, R, Bash.
- **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.
- **Software** - 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, building a server side inference orchestration pipeline that deterministically assembles system instructions and 100 percent of prior conversation history per request, enforces per persona session isolation across five AI personas, and sustains real time conversational inference with sub 120 ms end to end latency and zero cross session state leakage.
- Designed and implemented a code locked persona framework comprising 900 plus lines of hierarchical behavioural rules, 18 tiered constraint categories, and pre generation safety keyword scanning, reducing over advice and persona drift by design, preventing emotional dependency scenarios, and enabling stable, 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 IsolationForest anomaly detection model with 30+ engineered signals including temporal spending patterns and geo velocity indicators, achieving 98.7 percent precision, 93.4 percent recall, 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 12k transactions per second with under 90 ms latency, enabling a 0 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, delivering multi-sheet state management, a high-throughput computation grid supporting more than 2,600 cells, offline-first synchronisation, real-time autosave and seamless interoperability with external tools for scalability.
- Developed an AI co-pilot 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 percent and increasing data-analysis performance by 10 times.

FreeFlix, Full-Stack Movie Discovery Platform. 🔗

- Engineered a full-stack movie discovery platform using React, Node.js, Express, and MongoDB, integrating the TMDB and OMDB APIs to deliver real time recommendations across 5 mood categories, 10+ languages, and a catalog of 1,000+ titles while maintaining 99 percent uptime on Render cloud deployment.
- Implemented a secure authentication system using Firebase OAuth and JWT and developed backend services for 3,000+ user profiles, personalised collections, and watch history, reducing authentication time by 60 percent through optimised Google Sign-In handling and supporting concurrent user sessions efficiently.