





VIBHISHAN RANGA

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WORK EXPERIENCE

Delta Capita

 London, UK

 Oct 2022 – Present


Senior Software Engineer


- Leading the end-to-end design and development of a mission-critical backend system using Python (FastAPI) for a tier-1 wealth management client.
- Engineered a complete, multi-step financial data pipeline that automates the entire data workflow, ingesting 10+ raw CSV files, loading them into a SQL database, executing complex transformations, and feeding a dynamic fee calculation engine.
- Developed a sophisticated fee calculation engine to handle critical business logic, reducing processing time from 8 hours to 30 minutes (a 93% improvement) by implementing multiprocessing.
- Established a configuration-driven architecture to manage the complexity of processing over 500,000 data rows, a design that enabled rapid feature additions and updates without altering core application logic.
- Built a model validation layer to create schema coherence between the Python backend and a downstream C# system, ensuring seamless data contract integration.
- Enforced high code quality by establishing strict coding standards, full type-hinting, and automated linting with ruff pre-commit hooks, reducing pre-production bugs by an estimated 40%.
- Owned system reliability by implementing a comprehensive unit testing suite with pytest and detailed mock data to validate the correctness of the financial logic and protect against regressions.

Software Engineer

- Engineered and maintained a scalable, automated Index Review Application for a tier-1 market infrastructure provider using Python, PostgreSQL, and AWS.
- Drove a critical efficiency gain by automating a 4-hour manual review process, reducing execution time to under a minute and eliminating human error.
- Authored high-performance Python utility functions that reduced data processing time by 50% and streamlined core testing workflows.
- Modernized the system by refactoring the legacy codebase to a maintainable MVC architecture, which accelerated new feature development by an estimated 30%.
- Owned application reliability by developing a bespoke Regression Testing Suite, which reduced manual testing efforts by 200% and improved stability.
- Spearheaded the successful migration of the application from a desktop executable to a scalable web platform using FastAPI.


Project Intern @ Brun Health


 Hyderabad, India

 Jan 2011 – Jul 2021

- Contributed to the embedded system design for a novel neurostimulation device.
- Developed and modelled core algorithms essential for the device's functionality and subsequent data analysis.

Summer Intern @ Brun Health

 Hyderabad, India

 May 2019 – Jul 2019

- Collaborated with the R&D team on the 'Design of stethoscope using ultrasonic sensor project.
- Performed detailed analysis of circuit diagrams and output waveforms to optimize signal clarity and device performance.

PERSONAL PROJECTS

V Talks Tech

vibhishanranga.com/blog

- Architected and developed a complete blog platform and custom CMS, utilizing a Node.js/Express backend and a server-side rendered Next.js frontend for an optimal, SEO-friendly user experience.
- Implemented a secure RESTful API with JWT-based authentication and role-based access control (RBAC) to protect endpoints and manage user sessions.
- Engineered a robust data layer using Prisma ORM, designing a normalized schema and managing migrations for features like user profiles, posts, and newsletter subscriptions.
- Leveraged Next.js for Server-Side Rendering (SSR) and dynamic metadata generation to maximize SEO performance and achieve rapid page loads.
- Ensured code reliability by establishing a comprehensive testing suite (Vitest & Supertest) and enforcing strict code quality with ESLint, Prettier, and Husky pre-commit hooks.

Minimal Sketch

vibhishanranga.com/minimal-sketch

- Engineered a scalable, real-time multiplayer Pictionary application, leveraging WebSockets to synchronize game state and drawing actions across multiple clients with low latency.
- Designed and implemented the backend architecture in Node.js to manage concurrent user sessions, game rooms, and the serialization of canvas data for transmission.

SKILLS

Programming Languages

Python Java JavaScript C++ SQL

Web Development

Frontend

React HTML CSS Sass

Backend

Node.js Express WebSockets

Spring Boot FastAPI Django

Databases

PostgreSQL SQLite

Machine Learning & Data Science

TensorFlow PyTorch scikit-learn

Tools & Technologies

Docker Kubernetes AWS Lambda

AWS RDS AWS CloudFormation


AWS API Gateway AWS CloudWatch


AWS CodePipeline AWS S3 Git

EDUCATION


Master of Science - Healthcare Technologies

 King's College London

 London, UK

 Sep 2021 – Sep 2022

Bachelor of Technology - Electronics and Communications Engineering

 BML Munjal University

 New Delhi, India

 Aug 2017 – Sep 2021

ACADEMIC PROJECTS

Project MindMine: iOS Mental Health Application

Designed and developed an iOS mental health app (Swift/SwiftUI) analyzing behavioral patterns via HealthKit data, refined through UI/UX testing.

Pancreatic Cancer Detection from CT Scans using DeepMedic

Developed a DeepMedic-based algorithm (PyTorch/MONAI) to detect cancer in CT scans, achieving a Dice loss of 0.3149.

SOCIALS

 github.com/vibhishan

 [linkedin.com/in/vibhishan-ranga](https://www.linkedin.com/in/vibhishan-ranga)