Logu R

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Education

Indian Institute of Information Technology — Sri City, India
Bachelor of Technology in Computer Science and Engineering ***GPA-7.75/10*** — *Aug. 2019 – May 2023*

Alwin Memorial Public School — Chennai, India
Class XII (Maths, Computer Science, Physics, Chemistry) ***GPA-91 %*** — *Aug. 2017 – May 2019*

Alwin Memorial Public School — Chennai, India
*Class X (Maths,Computer Science, Science)****CGPA-9.6/10*** — *Aug. 2014 – May 2017*

Technical Skills

Languages: Java, Python, C/C++, SQL, JavaScript, HTML/CSS,GO
Frameworks: React, Node.js, Flask, Springboot, Micronaut
Developer Tools: Git, GitHub, Bitbucket, Docker, Kubernetes, Jira, AWS

Experience

Software Engineer - Strategic Projects — Feb 2023 – Present
IDFC First Bank — *Bangalore, India*

- Developing **OfferMart**, a system generating **personalized bank product offers** via the **Hyper Personalized Engine (HPE)**. Improved campaign effectiveness by 30-40%. Built and managed **70+ digital channels** with inbuilt analytics, spanning **WhatsApp Bots, Call Centers,Digital App Banners, etc**. Engineered data pipelines to transform **raw analytics into structured insights**. Enhanced the architecture for **new-to-bank** and **existing-in-bank** offers, integrating HPE and Salesforce. Optimized codebase to handle **25 million requests per hour**. Developed PoCs like **EventMart and DWARFs (URL shortener)**, now in active use.
- Developed **Project SPARK**, a strategic initiative in collaboration with **McKinsey**—a ledger-based approach to **CBS (Core Banking System) for both assets and liabilities**, built on Thought Machine Vault Core. This resulted in a **20% faster** product and customer onboarding process, significantly improving efficiency and scalability compared to FinnOne. **This was a $35 million project,** making IDFC First Bank the first in Asia to develop its own Core Banking System on a fully **event-driven architecture**. Developed Ops-FE services, responsible for servicing assets (Personal Loans, Home Loans, etc.) for the operations team.
- Delivered key projects including in **Eduloan-LAMS, PII-Encryption, Centralized Object Storage System, Masters Data Management, and OPS-FE**, leveraging **AWS (S3, ECR, EC2, Airflow), GoCD, Spring Boot, Micronaut, OracleDB/PostgreSQL, Kubernetes, Docker, Apache Kafka, Maven & Gradle, React Js, Go**. Ensured high code quality with **SonarQube** and mitigated vulnerabilities using **Checkmarx**.
- Enhanced observability with **ELK Stack, Prometheus, and Jaeger**, enabling early issue detection and reducing **MTTR by 30%**, significantly improving system reliability.
- Conducted **protocol analysis for gRPC, Apache Thrift, and Apache Kafka**, optimizing microservices communication. Increased **transmission efficiency by 40%** and reduced **latency by 25%**. Led onboarding of the Yartra corporate booking application, ensuring compliance with RBI-mandated security guidelines.

Project Intern — June 2022 – Sept 2022
IBM — *Remote*

- Built an application which generates **EDI-spe**c
- **Re-engineered the legacy monolithic MEAN stack into a modular microservice architecture using ES6,** enhancing code maintainability; achieved a **25% reduction in system downtime and a 45% faster feature deployment** rate
- Designed **micro-services** with **Node js, Express** and Deployed the application on **Kubernetes** with **Docker** and added features like various clusters of **MongoDB, PDF, docx** generation.

Projects

TimeTabler (Bachelor Thesis Project) | *Flask, React, SQL,MiniZinc,GEOTA* — Jan 2022 – Dec 2022

- **TimeTabler** is an Exam Timetabling Application that gives conflict-resolved timetables for the given data aka constraints while forming a timetable**(A NP- Complete Problem)**

- Solves using **CSP/SAT solvers** to solve the exam scheduling problem using **MiniZinc python and GEOTA solver** . The constraints are formed based on no of teachers,students, rooms, etc based on user input

D4Com | *Javascript, MongoDB, Node js, Redis, React, Bootstrap, Docker* June 2021 – May 2022

- Built a **MERN stack eCommerce platform** with a shopping cart, **PayPal/credit card payments**, and an **Admin Dashboard** for managing products, inventory, orders, and users.
- Developed **REST APIs** with **Redis caching** to enhance performance and reduce database load.
- Implemented **JWT-based authentication** with **role-based access control** for secure user data and admin features.
- **Containerized** the app with **Docker** and deployed it on **Heroku**, ensuring scalability and smooth management.
- Improved reliability with **unit integration tests** (**Mocha, Chai**), **CI/CD pipelines** (**GitHub Actions**), and **API documentation** (**Swagger**).

WealthSphere: The ABMS Odyssey | *Netlogo, Excel* Aug 2021 – Dec 2021

- Utilized data from the **Credit Suisse 2021 report** and demonstrated the emergence of complex patterns from simple rules at the individual level.
- Developed an **agent-based simulation** in NetLogo that extends **Wilensky's Sugarscape Wealth Distribution model**. Incorporated advanced fiscal policies such as **progressive income tax, flat and progressive inheritance tax, consumption tax rebates, minimum wage, public healthcare, and education**.
- Defined agent attributes including **age, wealth, metabolism, vision, income, and education**; and patch variables that represent land quality and grain capacity.
- Implemented **dynamic redistribution** mechanisms that adjust income and consumption based on social class and education level.
- Measured wealth inequality using **Lorenz curves and the Gini coefficient**, with **detailed analysis through BehaviorSpace experiments and T testing**.

Image encryption using AES and Visual cryptography | *Jupyter, Python* Aug 2021 – Dec 2021

- Developed a two-stage image encryption scheme that combines **AES-256 in OFB mode** with a **2-out-of-2 visual cryptography** approach.
- Employed **SHA-256** to derive a secure **256-bit key** from user input before encrypting images in **Base64** form.
- Represented the original key as an **ASCII-encoded image**, then split it into two shares using **XOR-based visual cryptography**.
- Verified code performance with various **image sizes and resolutions**, ensuring that images are decrypted without **visible quality loss**.
- Developed a **Python tkinter GUI** for image selection, key generation, and encryption visualization, while ensuring **secure image transmission** by testing against cryptanalysis methods like **related-key** and **meet-in-the-middle attacks**.

Twitter-IR System | *Django, Python* Aug 2021 – Dec 2021

- Designed and implemented a **tweet-based search engine** using **Django and Python**, deploying it as a web application for **interactive searching**.
- Developed a **text preprocessing workflow**, including **stopword removal, stemming, tokenization**, and a **corpus parser**
- Built a **frequency index** and computed **TF-IDF weights** to enhance term importance and reduce noise. Implemented **query refinement** using **Jaccard distance, edit distance, and WordNet thesaurus**, ranking results with **cosine similarity**.

Achievements & Extracurricular

- School Topper in Physics Class 12th
- Cleared JEE and was among top 2.5 percentile of the JEE Aspirants
- Won first place in the yearly political debate in IIIT Sricty
- Co-founded IEEE IIIT Sricity and brought in Industry talks
- Core founding member:- IIITians Network . A common network for all IIIT students across India

MOOCs

- **Deep Learning Specialization (MOOC)-Coursera Andrew NG**
  Covered the design, training, and optimization of deep neural networks using TensorFlow, with a focus on hyperparameter tuning, regularization, and optimization techniques such as BatchNorm, Dropout, and Adam.
  Explored Convolutional and Recurrent Neural Networks, including LSTMs and Transformers, for applications in computer vision, natural language processing, and structured data analysis.