

OMKAR POTE

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Education

Indian Institute of Technology, Madras

July 2016 – May 2020

Bachelor of Technology in Chemical Engineering

6.25/10

Technical Skills

Primary Skills: Java Spring Boot, RESTful services, OOP, System Design, C++, Microservices

Languages: Java, C/C++, Python, Javascript, Scala, PHP, Bash, MATLAB, LaTeX

Big Data: ETL, Spark, Databricks, AWS (EC2, EMR), Hadoop, MySQL, MongoDB, Neo4j

Software Development: OOP, SOLID principles, System Design, JUnit/Mockito, CI/CD, Agile methodologies, Git, Observability and Monitoring

AI/ML: Linear regression, Time series classification, Decision trees, Random forests, Neural networks

Technologies/Frameworks: OpenMP, Parallel programming, Docker, Kubernetes, RabbitMQ, Redis, Apache Nifi, Payment gateways, NodeJS, ReactJS, HTML/CSS

Experience

iACE Lab @ IIT Madras

Oct 2023 – Present

Project Scientist

- Working in the Intelligent Applications in Chemical Engineering (iACE) Lab under Prof. Rajagopalan Srinivasan. Current research focus: XAI methods for Fault Prediction in Process Monitoring Systems.
- Exploring post-hoc explainability techniques for multivariate time series classification models, to increase the reliability and trustworthiness of AI systems used by chemical plant operators with varying domain expertise and experience.

HILCPS Lab @ IIT Madras

Oct 2023 – Present

Software Quality Mentor

- Concurrently involved with the Human-in-the-Loop Cyber-Physical Systems (HILCPS) Lab, led by Prof. Babji Srinivasan.
- I oversee the project architecture and planning for an IoT project consisting of Flutter, Django, and Embedded C modules. My main responsibility here is to leverage my industry experience to guide the research group on implementing enterprise-level best practices.
- My current focus is to move the application to the cloud. I also assist in code review and refactoring and implement basic design patterns like Model-View-Controller.
- I conduct interactive sessions for the team, covering various aspects of software engineering, including agile methodologies, version control, code hygiene, and design patterns.

Capillary Technologies

May 2020 – Sep 2023

Software Developer, Payments

Dec 2021 – Sep 2023

- Designed and implemented POTATO (Potato Over-The-Air Transactions Orchestrator), a robust and comprehensive solution that facilitates seamless, cashless fuel transactions at gas stations.
- Executed the entire development process, constructing the microservice architecture including a Spring Boot-based application and databases using MySQL and MongoDB.
- Built highly secure APIs for communication with Payment Service Providers, fuel stations, and third-party services.
- Continually optimized the system performance, which leverages RabbitMQ to asynchronously handle real-time transactions, accommodating a user load exceeding 10,000 per minute.
- Additionally, took charge of instituting a CI/CD pipeline and implementing real-time monitoring systems to ensure optimal functionality.

Big Data Engineer, Extract-Transform-Load (ETL)

Oct 2020 – Nov 2021

- Worked on the in-house data warehousing and ETL system managing Capillary's flagship CRM and BI product, processing over 6 billion new daily records and compiling them into a star schema-based model with facts, dimensions, and KPIs.
- Developed REST APIs for transferring transactional and user data between internal microservices.
- Managed real-time executions, debugging, and optimizing Spark queries on AWS Elastic Map Reduce (EMR) clusters.

Intern

May 2020 – Sep 2020

- Built internal developer tools to handle the ETL process. This includes GUIs for end-to-end control and monitoring of executions from Neo4j, where the queries are stored as a Directed Acyclic Graph.

Tesco

May 2019 – Jul 2019

Software Engineering Intern

- Automated Tesco's food donation system by eliminating a labor-intensive step in stock management, optimizing processes for 2500+ stores and 6000+ charities.
- Developed a Donation Assistant API for product classification, implemented an Apache Nifi and Python Flask-based pipeline, reducing administrative workload by 20%, and enhanced donation accuracy/relevance by over 15% through data analysis using R tidyverse package.

Crest IT Consulting

Jun 2018 – Jul 2018

Web Development Intern

- Took up a complete rebranding initiative for the company, involving the development of a new website, logo, and brand identity. Check out crestit.in.

Activities and Projects

Projects

- **Yuj (formerly Caval):** Contributed as a founding team member for this IITM-based startup, which provided doorstep vehicle repair services. Led the development of the entire branding, logo, website, app, and other marketing materials.
- **ChemClave:** Created the ChemClave 2017 website as part of the WebOps team, for the annual event organised by the Chemical Engineering Society (CheS) of IIT Madras.
- **Cuckoo Dooku:** Developed a Star Wars-themed, open-source Chrome extension for productivity. Received a commendation in the FOSS hackathon 2021. See github.com/omkrpt/cuckoo-dooku
- **Snake Game:** Coded the game from scratch as a high school project. See omkarpote.com/#snake

Graphic Design

- **Technical Proficiency:** Skilled in graphic design using the Adobe Suite including Photoshop, Illustrator, Premiere Pro, and Indesign
- **Freelance Experience:** Freelanced for various clients from Dec'16 to Aug'18. Portfolio at behance.net/omkarpote
- **Head of Design, Entrepreneurship Cell, IIT Madras:** Led a team of 16 designers and associate designers, developing creative content for digital and printed media, over two semesters.
- **Inter IIT Sports Meet:** As part of the organizing team of the 2017 edition, designed marketing content, venue setups, and ambience for the tournament.

Extracurriculars

- **Department Soccer Team Captain:** Led the Chemical Engineering department soccer team to a third-place finish in the IITM Inter Department League 2018-19.
- **Karate:** Black belt holder with numerous accolades and medals on the national level, showcasing over 11 years of dedicated practice.
- **Music Certification:** Successfully cleared ABGMVM's Hindustani Classical Music Exam with an impressive score of 45/50.