Soham Nag

sohamnag@asu.edu | linkedin.com/in/sohamnag | github.com/SohamNag

EDUCATION

Master of Science in Computer Science GPA : 4.0
Arizona State University, Tempe, AZ *August 2022 – May 2024*

Bachelor of Technology in Electrical and Electronics Engineering GPA : 8.6
National Institute of Technology Meghalaya, Shillong, India *August 2013 – May 2017*

TECHNICAL SKILLS

Languages: Java, Python, C, C++, Objective-C, JavaScript, TypeScript, HTML, CSS, SQL, NoSQL, NewSQL, Kotlin
Libraries and Misc.: Spring Boot, Next.js, React.js, Node.js, Express.js, Django, Redux, Zustand, AWS (EC2, S3, Lambda, DynamoDB), Google Cloud (GCP), Microsoft Azure, GraphQL, PostgreSQL, MySQL, MongoDB, Redis, C#, Kibana, Elasticsearch, Git, Github, NPM, Yarn, Docker, Kubernetes, Ansible, Terraform, Firebase, Supabase, Apache Kafka, Mockito, JUnit, Selenium, Postman, Jenkins, Agile, SDLC, CI/CD , Gradle, Maven, Linux, Data Structures and Algorithms, Object Oriented Programming, Event Driven Architecture and Software Design Patterns, Jira, GitLab

RELEVANT TECH EXPERIENCE

Graduate Research Assistant & Teaching Assistant Aug 2022 – May 2024
Arizona State University *Tempe, AZ*

- Collaborated in the development of a Generative Adversarial Network based privacy preserving counterfeit identity document detection system and generated its corresponding benchmark dataset for a Department of Homeland Security funded research project of CACTUS Lab, ASU
- Performed an in-depth comparison of the performance of PostgresML (an in-database machine learning inference framework) against Sklearn, ONNX, Hummingbird, Treelite. Published the results in a paper in ACM SOCC'23
- Teaching Assistant for 'Database Management', 'Data Intensive Systems for Machine Learning', 'Principles of Programming Languages', 'Engineering Blockchain Applications' and 'Distributed Software Development'

OTHER EXPERIENCE

Operations and Maintenance Engineer July 2017 – July 2021
Power Grid Corporation of India Limited *Shillong, India*

- Collaborated with ABB Sweden for the commissioning of Asia's first 800 kV 3000 Megawatt high performance HVDC transmission facility in Assam (India) and acted as Team Lead for an execution team of 5 employees. The project improved the region's power reliability by over 20%
- Undertook routine testing and troubleshooting of company's internal IT network and network devices, reducing network vulnerabilities and network downtime by 4%

PROJECTS

Thesis Project: GAN based counterfeit identity document detection | *OpenCV2, Pillow, Pytorch*
- Developed a benchmark identity document dataset containing 4 types of fraud patterns. The entire dataset consists of 600k images and is about 60x times bigger than the similar existing dataset

Spotify Clone Application | *Next 13, React, Supabase, PostgreSQL, Zustand, Tailwind, Stripe API, Vercel*
- Implemented user registration, authentication, song and album art upload, liked/disliked songs and music playback functionalities in a polished UI. Leveraged the efficiency of Supabase and Zustand for authentication and state management. Integrated Stripe API for secure monthly subscription payments and deployed on Vercel.

Trivia Application | *Java, Spring Boot, PostgreSQL, Postman*
- Developed a trivia application containing separate microservices for CRUD operations on a question bank and generating a quiz for user. Question bank stored using PostgreSQL and services communicate using REST APIs

Biomarker Sensing Android App | *Android Stdio, Kotlin*
- Architected and developed a Kotlin based Android app that can be used to sense the current heart rate and respiratory rate of the user with an accuracy of 94%.

Meal Detection System for Artificial Pancreas | *Python, Pandas, Numpy, Sklearn, Scipy*
- Designed and implemented a meal detection model to determine whether an individual has consumed a meal based on input insulin data. Leveraged Random Forest Classifier technique of supervised machine learning on a provided training dataset to create a model of 82% accuracy.