Soham Nag

(623) 276-7241 | sohamnag@asu.edu | linkedin.com/in/sohamnag | github.com/SohamNag

EDUCATION

Master of Science in Computer Science <div align="right">GPA : 4.0</div>

Arizona State University, Tempe, AZ <div align="right">*August 2022 - May 2024*</div>

Bachelor of Technology in Electrical and Electronics Engineering <div align="right">GPA : 8.6</div>

National Institute of Technology Meghalaya, Shillong, India <div align="right">*August 2013 - May 2017*</div>

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

PROJECTS

1. **Thesis Project: GAN based counterfeit identity document detection** | *OpenCV2, Pillow, Pytorch, Python*
   - Developed a workflow to create a identity document dataset containing **20 different types** of IDs pertaining to 10 US states and 10 European nations. Each type further has 4 sub-types containing different fraud patterns
   - Produced an entire dataset of **600k images** which is about **60x times** bigger than the similar existing dataset

2. **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 with a sub 150ms loading time
   - Leveraged the efficiency of Supabase and Zustand for authentication and state management. Integrated Stripe API for **secure monthly subscription payments** and hosted the app on Vercel

3. **Cloud-Native Trivia Application** | *Java, Spring Boot, PostgreSQL, AWS EC2, RDS, S3, Postman*
   - Architected a trivia application using Java and Spring Boot, leveraging **microservices architecture to ensure scalability and modularity** to handle 1000+ players simultaneously
   - Implemented REST APIs for user authentication, retrieving questions, submitting answers, and tracking scores. Utilized **PostgreSQL** as the backend database managed through **Amazon RDS** for 40% lesser database management overhead

RELEVANT WORK EXPERIENCE

Graduate Research and Teaching Assistant <div align="right">*August 2022 - May 2024*</div>

Arizona State University <div align="right">*Tempe, AZ*</div>

- **Augmented a benchmark ID dataset by 5900%** for a **Department of Homeland Security** funded research project of developing a Generative Adversarial Network based privacy preserving fake ID detection system
- Performed an in-depth comparison of the performance of PostgresML (an in-database machine learning inference framework) against Sklearn, ONNX, Hummingbird, Treelite and **published the results in a paper in ACM SOCC'23**
- Facilitated grading for **500+ students** in courses 'Database Management', 'Data Intensive Systems for Machine Learning', 'Principles of Programming Languages', 'Engineering Blockchain Applications' and 'Distributed Software Development'

OTHER EXPERIENCE

Operations Engineer <div align="right">*July 2017 - July 2021*</div>

Power Grid Corporation of India Limited <div align="right">*Shillong, India*</div>

- **Spearheaded a team of 5 employees** to collaborate with ABB Sweden, **resulting in a 20% improvement** in power reliability for North-East India through commissioning **Asia's first** 800 kV, 3000 Megawatt high-performance HVDC transmission facility in Assam
- **Improved network performance and network downtime by 4%** by testing and troubleshooting the company's internal IT network and network devices