

# Soham Nag

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## EDUCATION

### Master of Science in Computer Science

Arizona State University, Tempe, AZ

GPA: 4.0 / 4.0

### Bachelor of Technology in Electrical and Electronics Engineering

National Institute of Technology Meghalaya, Shillong, India

GPA: 8.6 / 10

## TECHNICAL SKILLS

**Languages:** Java, Python, C, C++, JavaScript, TypeScript, HTML, CSS, Kotlin

**Database:** PostgreSQL, MySQL, MongoDB, Redis, Elasticsearch, SQL, NoSQL, NewSQL

**Cloud:** AWS (EC2, S3, Lambda, DynamoDB, RDS), Google Cloud (GCP), Microsoft Azure

**Libraries and Misc.:** Spring Boot, Next.js, React.js, Node.js, Express.js, Django, Redux, GraphQL, Kibana, Git, Github, NPM, Yarn, Docker, Kubernetes, Ansible, Terraform, Firebase, Apache Kafka, Mockito, Postman, Jenkins, Agile, SDLC, CI/CD, Jira, Gradle, Maven, Linux, Data Structures and Algorithms, Object Oriented Programming

## RELEVANT WORK EXPERIENCE

### Software Engineer Intern

OneDrug, Tempe, AZ

June 2024 – Present

- Developing the web app 'Electronic Health Record' functionality using **React for frontend, MongoDB for database and backend REST APIs** to transfer data using **Node and Express.js**

### Graduate Research and Teaching Assistant

Arizona State University, Tempe, AZ

August 2022 – May 2024

- Engineered an end-to-end pipeline to generate high-fidelity identity documents across 20 types for a **Department of Homeland Security** funded project aimed at developing a GAN based privacy preserving fake ID detection system
- Developed a **Spring Boot based backend service** that utilizes the OpenAI's gpt-4 API to generate relevant personally identifiable information (PII) for each identity document type.
- Dockerized** the service and **deployed it on AWS**, utilizing **Amazon Elastic Container Service (ECS)** for container orchestration and **Amazon Elastic Container Registry (ECR)** for managing Docker images, ensuring reliability and scalability
- Exposed the service via a **REST API** to facilitate seamless access and interaction, generating approximately 600,000 identity documents, showcasing the pipeline's capability to produce large-scale, diverse datasets efficiently.

## PROJECTS

- 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
- TripSafe Safety Companion iOS App | Xcode, Swift, Core Motion, MapKit, Maps API**
  - Designed and developed an iOS application using **Swift to enhance safety measures** for long-haul drivers, integrating multiple real-time functionalities, as listed below
  - Implemented an **overspeeding detection algorithm and nearest gas stations** suggestions for timely refueling
  - Engineered an **automatic crash detection** feature utilizing sensor data, coupled with emergency service coordination functionality, enabling swift response in critical situations
  - Implemented real-time monitoring of driver physiological parameters, including **heart rate and breathing rate**, to gauge driver wellness and stress levels
- Distributed Content Delivery Network (CDN) | PostgreSQL, MongoDB, Python, Docker**
  - Developed a SQL and NoSQL based distributed CDN leveraging Docker containers and Docker Networking
  - Devised efficient **database replication and failover strategies** with 1 master and 2 slave nodes