Raj Shah
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EDUCATION

- **North Carolina State University** — Raleigh, NC
  Masters of Science in Computer Science; **GPA 4.0** — *Jan. 2021 - Present*
  Coursework: Computer & Network Security, DBMS, Automated Learning and Data Analysis, Software Engineering, Cryptography, Graph Data Mining

- **Dhirubhai Ambani Institute Of Information and Communication Technology** — Gandhinagar, India
  Bachelor of Technology in Information and Communication Technology; GPA: 8.19/10 — *July. 2014 - June. 2018*

TECHNICAL SKILLS

- **Languages & Frameworks**: Java, SpringBoot, JavaScript, NodeJS, Express, Angular, Python, Go, bash, React, Bootstrap, SQL
- **Software & Libraries**: Redis, RabbitMQ, AWS, Docker, Jenkins, Git, MongoDB, Postman, JMeter, BeautifulSoup, Pandas
- **Strengths**: Software Development, System Design, Objet Oriented Programming, Database Management, Data Structure & Algorithms

EXPERIENCE

- **North Carolina State University** — Raleigh, NC
  Research Programmer, Graduate Research Assistant — *Dec 2020 - Present*
  - SimStudent is an ML-agent used as a synthetic tutee for students to learn by teaching
  - Worked on making SimStudent available on the web by transforming the existing java based desktop application to a web based application using Spring Boot, Angular & MySQL
  - Made it support concurrent users and implemented service for health checking servers and routing users to appropriate servers (as routing needed to be sticky).

- **General Electric** — Bengaluru, India
  Software Engineer, Tech Anchor — *June 2018 - November 2020*
  - Developed an application that models cost of service agreements between GE and wind farm owners. Technologies used: Spring Boot, Angular, Node and other AWS services
  - Setup OAuth2 authentication and authorization for the cost modelling application
  - Created a reverse proxy service using Node that acted as an entrypoint for incoming requests
  - Developed Raven, a service for sending targeted email, text message and push notifications based on user location. Technologies used: Spring Boot, RabbitMQ, UrbanAirShip
  - Dockerized local development setup (which significantly reduced on-boarding time) and automated deployment using Jenkins
  - Created generic CRUD API to enable dynamic crud operations without any boiler plate (used for prototyping)
  - Led migration from Cloud Foundry to AWS, as well as efforts for refactoring and performance optimization (increased performance of certain core APIs by more than 30%

  Software Engineer Intern — *Jan 2018 - June 2018*
  - Developed a notification system for handling push notifications. Technologies used: JavaScript, NodeJs, Express, Spring Boot
  - Handled the end to end development of a product catalog web app. Technologies used: Angular 6, NodeJS, Express

- **Dhirubhai Ambani Institute Of Information and Communication Technology** — Gandhinagar, India
  Teaching Assistant for Data Structures & Algorithms, Research Assistant
  - Sentiment Analysis - created Python script for collecting, cleaning and processing more than 1 Million tweets

PROJECTS

- **Realtime Chat Room Application**: Developed a real time chat room application using Spring Boot, Web Sockets and RabbitMQ
- **Big Box Reatiler Database Service**: Designed and implemented a database service for a Costco like store using MariaDB & Spring Boot. Performed partitioning, indexing, and query optimizations to improve performance
- **Graft**: Developed a raft based distributed Key Value store in Go, did a manual implementation of raft instead of using an existing library
- **API Rate Limiter**: Developed an API rate limiter in NodeJS using Express and Redis
- **Casper web game**: Developed a game similar to flappy-bird using JavaScript, added social media login using OAuth2 with SpringBoot and maintained leaderboards using Redis

LEADERSHIP & AWARDS

- Led knowledge sharing sessions across GE for sharing software engineering practices and concepts
- 2 Impact Awards, General Electric
- International Rank 5, International Mathematics Olympiad 2012