# Aditya Rathod

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## Education

The University of Texas at Dallas, Richardson, TX — Aug. 2019 – May 2023
**B.S. in Computer Science**, Minor in Business Intelligence & Analytics — **3.8/4.0 GPA**
***Awards:*** *National Merit Scholar / National Merit Scholarship Recipient, Dean's List*
***Coursework****: Data Structures & Algorithms, UNIX Systems Programming, Machine Learning, Artificial Intelligence, Databases/SQL*

## Skills

*Languages:* JavaScript/TypeScript, Java, Python, HTML/CSS, C++, C#, SQL, R
*Tools:* AWS, Git, Vim, React, NodeJS, Jest, Express, React Native, Spring Boot, Pandas, NumPy, PySpark
*Databases:* MongoDB, MySQL, PostgreSQL, Elasticsearch/OpenSearch

## Experience

**Software Development Engineer Intern, Amazon Web Services, Cupertino, CA** — **May 2022 – Aug. 2022**

- Designed and developed data pipeline to ingest and process **8+ billion packets daily** from global DDOS mitigation fleet using SQS and Lambda, enabling analysis of high-volume attack traffic entering the Amazon network
- Developed UI in Django to search over extracted metadata, enabling customers to mitigate attacks more effectively
- Set up a CI/CD pipeline in AWS CDK using TypeScript to deploy infrastructure across regions, created CloudWatch metrics/logging/alarms to ensure data pipeline health, and conducted load tests to ensure scalability
- Technologies used: AWS SQS, Lambda, OpenSearch, S3, CDK/CloudFormation, CloudWatch, EC2, Python, TypeScript

**Software Developer Intern, Paycom, Oklahoma City, OK** — **May 2021 – Aug. 2021**

- Developed data ingestion/query service to store **100+ million daily** core product and infrastructure events
- Created a low-latency web-based internal analysis tool and query language that enables web, iOS, and infrastructure teams to filter and utilize events from the service for troubleshooting and feature refinement
- Technologies used: C#, ASP.NET Core, Sprache (parser combinators), Elasticsearch, JavaScript, React, Swagger

**Software Developer Intern, RealPage Inc., Richardson, TX** — **May 2020 – Aug. 2020**

- Redesigned Leasing Tablet mobile app using React Native, **doubling the number of supported platforms**
- Designed/implemented API in Spring Boot/Java, **unifying access to 3 different data sources** used in the Leasing Tablet application, including a novel ID verification enhancement to be used across company products
- Technologies used: JS/TypeScript, React Native, Redux, Jest, Java, JUnit, Spring, PostgreSQL

**Summer Undergraduate Researcher, UT Dallas, Richardson, TX** — **Jun. 2019 – Aug. 2019**

- Developed a Seq2Seq model for abstractive news summarization in Keras and TensorFlow
- Collected and trained on novel training dataset of **25,000 news articles** using custom scraper written in Python
- Presented findings at a poster symposium with computer science faculty in attendance

## Projects

**Comparison of Current Online Portfolio Selection Algorithms** *(github.com/ACM-Research/online-portfolio-selection)*
*Technologies: Python, NumPy, Pandas, Matplotlib, SciPy*

- **Led team of five** in undergrad research project benchmarking current strategies to optimize asset portfolios
- Created data preprocessing pipeline to process **3.1 million+ market ticks** in under 2 mins
- Designed strategy comparison framework and optimized core backtesting method by **150%**, enabling comparisons on **weeks of tick-resolution data in just 20-30 minutes**

**Supercharged: Medicare Medical Billing Analytics** *(github.com/adityarathod/supercharged)*
*Technologies: React, NextJS, NodeJS, SQLite, Spark/PySpark, Python*

- Developed a serverless medical price comparison tool for Medicare patients with search and treatment statistics
- Created PySpark jobs to extract & load **190k+ data points across 3.1k+ providers** from semi-structured data sources

## Activities

**HackUTD**, Experience Officer — **Feb. 2022 – Present**
Part of organizer team for an 800-attendee collegiate hackathon (the largest in Texas). Developed technical workshops to present at hackathon, attended by 50+ hackers and developed in collaboration with other student organizations.

**UT Dallas Association for Computing Machinery**, Research Lead — **Apr. 2020 – Dec. 2021**
Developed introductory **10-week research projects** in collaboration with professors **with 4-6 students** every semester (15% acceptance rate for participants). *Project topics: quantitative finance, deep learning, federated learning*