Tarun Ajjarapu

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Education

The University of Texas at Austin Austin, TX

Bachelor of Science in Computer Science, Minor in Business *Expected Graduation: May 2026*

- **GPA:** 3.8/4.0
- **Relevant Coursework**: Data Structures and Algorithms, Operating Systems, Software Engineering, Mobile Computing, Computer Architecture, CS Statistics, Multi-variable Calculus, Competitive Programming

Experience

JPMorgan Chase & Co June 2024 – August 2024

Incoming Software Engineer Intern *Plano, TX*

Trend Micro June 2023 – August 2023

Software Engineer Intern *Austin, TX*

- Developed Python-based REST APIs hosted on AWS Lambda to streamline the Business Intelligence (BI) telemetry scan process for retrieving Stack (Security VPC) settings and NSVA (Network Security Virtual Appliances) information from AWS resources, resulting in a **40x reduction** in API response time.
- Leveraged the boto3 library to interact with AWS services and efficiently collect and aggregate data from AWS resources in production, consolidating over **100 individual calls every 30 minutes** into a streamlined process for retrieving stack information in a **single request**.
- Utilized the Chalice framework to handle API routing, request validation, and integration with AWS services, ensuring seamless communication and data retrieval from the NSHI (Network Security Hosted Infrastructure).
- Employed the marshmallow library for data serialization and deserialization, ensuring efficient and consistent handling of data structures within the APIs.
- Migrated a Security VPC into an AWS EC2 instance connect using Terraform, resulting in a **56% reduction** in cost and a **28% improvement** in network security posture.

Projects

Unshakable Japan | *Python, Flask, React.JS, Docker, MySQL, AWS EC2* January 2024 – May 2024

- Developed a Flask-based web application to display **real-time information** about earthquakes in Japan, integrating Google Maps API for geolocation and providing features for sorting and searching earthquake attributes, prefectures, and resources.
- Implemented REST APIs using Flask, Python, and MySQL to scrape data from the internet and create relational connections between instances, while deploying the app using Docker on AWS EC2 for scalable online access.

Tindora - Formula Hacks Winner, UT Austin | *Node.JS, Express, MongoDB, Google Gemini AI* March 2024

- Constructed RESTful APIs using Node.js and Express, integrating Google Gemini OCR to parse receipts, extract ingredients, and generate weekly meal plans, leading to winning **Best Use of MongoDB** and **Best Pitch**.
- Utilized MongoDB to store user preferences, resulting in a **25% increase** in efficiency for future shopping trips through optimized customization, and developed mechanisms to store personalized food options, contributing to a **40% reduction** in time spent planning meals and creating grocery lists for users.

Dynamic Memory Allocator | *C* January 2023 – March 2023

- Developed a dynamic memory allocator in C, using a memory address sorted policy for free memory block insertion and a first-fit allocation strategy for efficient block assignment, averaging **2200 operations per millisecond**.
- Implemented memory block splitting to utilize available space within allocated blocks and employed coalescing techniques to merge adjacent free blocks, successfully attaining an average memory utilization of **over 82%** during stress tests.

Technical Skills

Languages: Java, Python, C/C++, HTML/CSS, XML, JavaScript, Kotlin, Swift
Frameworks: React.JS, Node.JS, Flask, Express, Chalice, Django, React Native, Spring Boot, TensorFlow
Libraries: Boto3, Marshmallow, Pytest, Requests, Axios, Scikit-learn, Botocore
License and Certifications: AWS Certified Cloud Practitioner
Databases: MySQL, PostgreSQL, SQLite, MongoDB, DynamoDB, Amazon RDS, Firebase
Other Skills: RESTful API, AWS CF / EC2 / Lambda / RedShift, Git, Docker, Postman, Agile/Scrum methodology