Himanshu Shishir Shah

(Current CS graduate student | Software Engineer with 2 years of experience)

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EXPERIENCE

Viant Technology, Irvine, CA — Jun 2023 – Dec 2023

Full Stack Intern, Platform

- Developed a feature for extracting audio from videos using AWS MediaConvert, SNS, DynamoDB, and EventBridge to increase the bid eligibility of video creatives; **achieving** an estimated **15% lift in generated revenue**
- **Saved 8+ engineer hours (per use)** by automating the process of adding new third-party segments using Angular, Golang, AWS Lambda, APIGateway, and S3
- **Improved performance** of existing Python scripts **by 30x** on average using Codon, **reducing costs** by **at least 15x**
- Evaluated *go-migrate* as a schema migration tool to **improve efficiency** and **reduce deployment time**

Visible Alpha, Mumbai, India — Mar 2022 – Jun 2022

Software Engineer 2, Data Feed and APIs

- Engineered the framework for adding Snowflake as a data delivery channel using Falcon, Python, and MySQL, **increasing** the **generated revenue by 45%** and **reducing the Time To Value**
- Built APIs to **reduce** the average **tech-support turnaround time** by **80%** from **10 to 2 minutes**
- Revamped the file dispatcher microservice to **reduce the number of open SSH connections** by **5x** using Paramiko
- Implemented a dashboard to report daily file generation and dispatch metrics to aid the Support Team in monitoring failures
- Performed Snowflake database replication over different regions and clouds (AWS, GCP, Azure)
- **Documented projects** using the Sphinx documentation generator to **improve code maintainability** and **productivity** for new developers
- Assisted the Infrastructure team with deployment issues

Visible Alpha, Mumbai, India — Jun 2020 – Feb 2022

Software Engineer 1, Data Feed and APIs

- **Migrated** the existing **monolithic ETL application** to a **microservice-based** implementation, delivering high-volume, real-time data to clients with low latency, using Django, MongoDB, and Redis, driving $2 million in revenue
- **Optimized file dispatch latency** by **80%** using RabbitMQ & Celery for asynchronous task execution (**60 to 10 seconds**)
- Designed and added REST APIs and AWS S3 as data delivery channels to **ease data consumption** for clients
- **Augmented error logging** by leveraging the latest features of Sentry and by implementing a global logger, **saving 25%** of the **team's time** spent on debugging and bug fixes
- Solved complex performance problems by resolving production issues, gaining exposure to dealing with large-scale software design issues, and avoiding performance bottlenecks
- Wrote unit tests using the Pytest framework and **increased unit test code coverage** from **11% to 77%**
- Worked on projects through different phases of the software development life cycle including writing unit and automation tests and deploying projects on servers using Docker and Jenkins
- **Carried out load** and **performance testing** of the APIs using Apache JMeter to **estimate API scalability** and **identify system lag**
- **Improved the Software Engineering process** of the team by **setting up a dev environment** using Docker and Jenkins for **dev testing**
- Assisted the Database Administrator by writing backward-compatible queries for MySQL version migration from MySQL 5.x to 8
- Augmented QA team's automation test suite using the Cucumber test framework and Behavioral Driven Development (BDD)

IIT Bombay, Mumbai, India — Oct 2019 – Jun 2020

Research Intern, Front-End for Synergistic Program Analyzer (SPAN)

- Devised a high-level language (*specDFA*) to allow non-programmer users to **specify data flow analyses intuitively**
- Implemented a transpiler using ANTLR and Java to convert *specDFA* to Python and integrated it within SPAN
- Researched existing literature to learn about static program analyzers and data flow analysis such as Liveness Analysis, Available Expression Analysis, etc.

Mastek, Navi Mumbai, India — Jun 2019 – Jul 2019

Project Trainee

- Developed an internal help-desk mobile app using Angular 8, MySQL, HTML, and CSS, allowing employees to **log trouble tickets more conveniently** than its desktop counterpart. Used Apache Cordova to convert it to a mobile app
- Added a search functionality within the app to allow employees to **easily find the tickets** they raised

EDUCATION

University of California Irvine, Irvine, CA Sept 2022 – Dec 2023
Master of Computer Science | GPA: 4.0/4.0
Coursework: Algorithms, Parallel and Distributed Computing, Machine Learning and Data Mining, Compilers

K J Somaiya Institute of Technology, University of Mumbai, Mumbai, India Aug 2016 – Oct 2020
Bachelor of Engineering in Computer Engineering | GPA: 8.96/10.0 (3.71/4.0)
Coursework: Databases, Computer Networks, Web Development, Cloud Computing, Big Data Analytics, Operating Systems

PROJECTS

Crontab Manager – *Python, Angular* | *read more* | *link* Jul 2023 – Present
- Creating a UI to allow users to create, update, and delete cron jobs on the host and any Docker containers running on it

TableGen Formatter – *C++, Compilers* | *read more* | *link* Jan 2023 – Jun 2023
- Extended *Clang-Format* to support formatting of TableGen files with several configurable formatting style options

Tweet Sentiment Analysis – *Deep Learning, Machine Learning, NLP* | *read more* | *link* Mar 2023 – Apr 2023
- Classified sentiments of **1.6 million** tweets as *positive* or *negative* with **82.24% accuracy** by building PyTorch models
- Compared the model performance with other models such as 1D CNN, and RNN
- Analyzed and visualized data to perform data cleanup and build preprocessing pipelines

DNS Server – *C++, Computer Networks* | *read more* | *link* Feb 2023 – Mar 2023
- Implemented a DNS server that recursively resolves a domain name and supports multiple record types
- Researched the original DNS specification to understand the message formats and learned about *dig* and *nc* commands

SMPL Compiler – *Python, Compilers* | *read more* | *link* Jan 2023 – Mar 2023
- Constructed a compiler for *SMPL* programming language which includes arrays and user-defined functions
- Added optimizations such as Copy Propagation, Common Subexpression Elimination, and Dead Code Elimination
- Implemented a global register allocator by tracking live ranges of individual values and building an interference graph
- Built a transpiler to convert optimized IR into Dot language and displayed the final output as a graph using GraphViz

Orca Call Detection – *Machine Learning, Deep Learning* | *read more* Jan 2020 – Apr 2020
- Built a CNN model using Keras to identify Orca whale calls and detect their pods using audio samples and displayed its effectiveness when combining it with template matching, resulting in **92% model accuracy**
- Published and presented a technical paper in SSRN – Elsevier, 2020

SKILLS & INTERESTS

- **Languages & Frameworks:** Python, Golang, C++, Java, TypeScript, Codon, HTML, CSS, Django, Falcon, Angular, LLVM
- **Databases, Caching & Message Queues:** MySQL, MongoDB, Snowflake, Redis, RabbitMQ
- **Testing:** Pytest, Sentry, Apache JMeter, Cucumber, Postman, SonarQube, Unit testing, Load testing, TDD, BDD
- **Cloud:** AWS (S3, EC2, DynamoDB, SNS, Lambda, MediaConvert, EventBridge, CloudWatch, APIGateway)
- **DevOps & Misc:** Git, CI/CD, Docker, Jenkins, OOP, REST APIs, Linux, Unix, Microservices, Distributed Systems, Back-end
- **Interests:** Vinyl Record collecting, Badminton, Table Tennis, Writing TIL posts

LEADERSHIP

- Accepted for presenting a Technical Talk on *TableGen Formatter* at the *2023 LLVM Developers' Meeting, Santa Clara (Oct 10-12)*
- Initiated monthly tech Brown Bag sessions at Viant to foster knowledge sharing; conducted the first session on Schema migrations