FENIL DOSHI

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EDUCATION

M.S. (Computer Science) University of Massachusetts Amherst [CGPA: **4.0/4.0**]   *Jan. 2021 - Dec. 2022*
Courses: Systems for Data Science, Advanced Algorithms, Intelligent Visual Computing, Advanced Machine Learning, Advanced NLP
B.E. (Computer Engineering) D.J. Sanghvi College of Engineering, Mumbai University [CGPA: **9.71/10**]   *Aug. 2016 - Jun. 2020*
Courses: Software Engineering, Computer Networks, Databases, Web Development, Operating System, Cloud and Distributed Computing

EXPERIENCE

1. Software Engineer, Slack @ Salesforce: *Feb. 2023 - Present*
- Spearheaded efforts on modernizing the datalake by incorporating streaming technologies, and moving from Hive to Apache Iceberg table format, as part of the Data Ingestion (team responsible for bringing data from various sources into Slack's datalake).
- Launched a cross-functional service that streamed MySQL changelog via Kafka to Iceberg table & programmed Scala Spark jobs to merge incremental data. Data landing time reduced from **24 hrs to 10 mins** enabling faster insights, while also **saving $2M annually**.
- Added new features using *Python*, *Golang* to our ingestion systems like enabling weekly ingestion of data that saved **$0.9M** yearly.
- Maintained AWS and Airflow infrastructure (EC2, Spark on EMR, AMIs, S3, Kubernetes) supporting the ingestion of petabytes of data daily. Also, upgraded Java, MySQL, Spark, and Ubuntu versions across a fleet of **4k+ EC2** instances with **zero downtime**.
- Developed Airflow pipelines and Scala Spark jobs to ingest Quip's data, enabling essential in-house analysis, while saving **$220K**.

2. Software Engineering Intern, Slack @ Salesforce: *May 2022 – Aug. 2022*
- Collaborated with the Data Eng team to build a REST API interface using *Python*, *FastAPI* & developed a lineage visualization system using *React.js*. The service tracks the flow of data within Slack & notifies all downstream users for any data related announcements.
- Contributed to *OpenLineage*'s **open-source code** for *Airflow* integration which allows users to annotate tasks' inlets and outlets.
- Raised the lineage coverage from **70% to 100%** and reduced error tracing and alerting time of the system from **60+ sec. to 3 sec**.

3. Graduate Student Researcher, Meta: *Jan. 2022 – May 2022*
- Researched under Dr. Marco Baroni to simulate human language-like learning & learn visual representations by training agents to develop communication strategies using supervised machine learning. Improved accuracy from **82.8%** to **97.3%** on ImageNet data.

4. Software Engineering Intern, Unity Technologies: *May 2021 – Aug. 2021*
- Developed and deployed a cron-job that queries *Bigtable* using *Golang* to compute the inactive advertisement targets in games.
- Reduced the run of the job from **9 days** to **6 hours** by using multithreading and efficient data retrieval.
- Decreased the storage & processing costs by **$300K/**year by deleting around **1.2M** inactive targets every month from *MongoDB*.

5. Machine Learning Engineer, Clutterbot: *Jun. 2020 – Dec. 2020*
- Worked on monocular and stereo depth estimation from RGB cameras using Deep learning on embedded systems *(Jetson Nano)*.
- Implemented disparity estimation network and optimized it using *TensorRT* to work in real-time on a toy-collecting robot.
- Evaluated the model on a custom indoor dataset and obtained **94%** accuracy while processing at **30 FPS**.

6. Machine Learning Engineering Intern, Fusion Engineering   *Jun. 2019 – Aug. 2019*
- Developed a model to identify sheet music among various images and convert the musical notation to a human-readable format.
- Trained a *Pytorch* deep learning model (*YOLOv3*) to detect musical symbols & annotate them based on their positions on staff lines.

7. Software Engineering Intern, Speridian Technologies: *Jun. 2018 – Aug. 2018*
- Created web pages for tracking the products' status via barcodes and developed a production management system using *React.j*s.

8. Software Developer Intern, Symphony: *Oct. 2017 – Jun. 2018*
- Built a chatbot for music recommendation, using *Dialogflow*, *Node.js*, and *Firebase*. It was voted as the most useful feature when Symphony won the **People's Choice award** at Rice Business Plan Competition, Texas.

SKILLS

Programming Languages: Python, Golang, Scala, Java, C, C++   **Big Data:** Apache Spark, Flink, Kafka, Iceberg, Hudi, Hadoop, Hive
Web (Frontend): HTML, CSS, JavaScript, React.js, Redux   **ML Stack:** PyTorch, LangChain,TensorFlow,HuggingFace,Keras,OpenCV
Web (Backend): Django, FastAPI, Node.js, PHP, GraphQL, Flask   **Cloud:** Amazon Web Services (EMR, EC2, SageMaker), Google Cloud
Databases: MySQL, PostgreSQL, Vitess, MongoDB, Bigtable   **Miscellaneous:** Docker, Kubernetes, Jenkins, Apache Airflow, GitHub

PROJECTS

1. Map Reduce System: *(Java, Socket programming, Multi-Processing, Fault Tolerance, RMI, Apache Spark, Docker, Git)*
  - Developed a fault-tolerant system similar to *Hadoop* that can run arbitrary user-defined *Map-Reduce* programs efficiently.
  - Implemented parallel processing with *Java ProcessBuilder API* and enabled inter-process communication using sockets.
2. Prodigal Website: *(Web Development, HTML, Javascript, React.js, Redux, Node.js, REST API, Docker, Kubernetes, Git)*
  - As a freelancer, developed and launched the Prodigal website (a cloud-based Finance company) using *React.js* and *Node.js*.

TEACHING / MENTORING

- **Course instructor** for **"Exploring Modern Computing"** at **UMass Amherst** (link) that acquaints students with various CS fields.
- Organized reading group sessions, taught **Bayesian learning** (link) and helped 130+ students as a Teaching Assistant for Machine Learning Summer Course (link) (funded by **Google AI Research**) as a member of Unicode Research (Reading and Research Group).
- Conducted lectures on **Data Structures, Algorithms** & set problems for coding competitions as head of coding group- CodeStars.
- As web developer and mentor at Unicode (an **open-source organization**), created a book exchange portal for the college and spearheaded a team of 40+ students to develop an automated webapp to ease the ordering system at the college canteen.