

Jaldhir Trivedi

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EXPERIENCE

Valted Seq

Gaithersburg, MD

Data Scientist, Bioinformatics and Machine Learning

Jan'23 – Present

- Owned single cell RNA seq pipeline (written in **shell** scripts & **python**) that generates gene expression matrices
- Processed **~10 billion** reads across runs by deploying pipeline on in-house servers and on **GCP Compute Engine**
- Developed novel **GPU** accelerated adapter alignment pipeline that parallel processes huge FastQ files
- Used **Cuda** via Numba to achieve **23x speed** (compared to alternatives) in barcode tagging genomics reads
- Led development of dataportal powerful enough that visualizes **1TB** data in real time using **Plotly Dash** framework
- Transfer learning through finetuning a **Transformer** model for cell typing in single cell RNA seq dataset

Amazon Inc.

Bellevue, WA

Software Development Engineer

June'22 – Jan'23

- Built RNN GRU **quantile regressors** for predicting demand and pre-provisioning resource for cloud gaming platform
- Limit concurrency of **AWS Sagemaker** and **AWS Athena** jobs using **Lambda State Machine** jobs API calls
- Wrote **AWS Lambda** functions written in establishing various **microservice** business logic
- Leveraged **AWS CloudFormation**, configured using **Typescript**, to create infrastructure cost monitoring dashboards

LeanFM Technologies

Pittsburgh, PA

Data Science Intern

May'21 – Aug'21

- Developed LSTM for **predictive modeling** of temperatures in HVAC systems that performs within 2°F margin of error

Carnegie Mellon University

Pittsburgh, PA

Graduate Teaching Assistant: 24789- Deep Learning & 24787- Machine Learning

Jan'21 – May'22

- Undertook recitations for students' supplemental learning, organized Office Hours, designed and graded assignments

Hindustan Petroleum Corporation Limited

Bhopal & Ahmedabad, India

Officer- Sales & Technical Services, Lubricant Oils

Aug'18 – Sept'20

- Managed a portfolio that brought average annual turnover of \$3 Million and a profit of \$500,000 for the corporation

EDUCATION

Carnegie Mellon University

Pittsburgh, PA

MS in Mechanical Engineering (Concentration: Machine Learning) GPA: 4.0/4.0

May 2022

Carnegie Mellon University

Pittsburgh, PA

MS in Engineering & Technology Innovation Management (ETIM) GPA: 3.96/4.0

Dec 2021

Indian Institute of Technology Gandhinagar (IIT Gandhinagar)

Gandhinagar, India

BS in Mechanical Engineering (Honours) GPA: 8.1/10.0

Aug 2018

PROJECTS

Model Pruning for a deep CNN while retaining near perfect accuracy

Pittsburgh, PA

Course Instructor: Dr. Virginia Smith, Carnegie Mellon University

Sept'21 – Dec'21

- Used **Tensorflow** to create magnitude based pruning for a CNN with 592k trainable parameters
- Achieved 97% model sparsity with the loss of accuracy restricted 2 points

Biomechanics with Deep Learning & Inertial Measurement Units

Pittsburgh, PA

Course Instructor: Dr. Amir Barati Farimani, Carnegie Mellon University

Feb'21 – May'21

- Wrote pipeline in **Pytorch** trains LSTMs to predict Ground reaction forces using IMU data
- Used **Ray tune** to run ASHA scheduler scheme to **tune hyperparameters** to get mean error of 0.08% body weight

TECHNICAL SKILLS

Programming: Python, Shell script, C++, JavaScript, TypeScript, MATLAB, SQL, CSS, HTML, Java
AWS: DynamoDB, S3, Sagemaker, Athena, Cloudformation, EC2, EBS, Lambda, Eventbridge, SNS, Glue
Tools: Docker, SaS Enterprise Miner, Tableau, Figma, Databricks, NLTK, spaCy, Git, dash, cytoscape
Libraries: Pytorch, TensorFlow, Spark, Numba, Keras, OpenCV, OpenAI Gym, Ray tune, Matplotlib, anndata

PUBLICATION

Kang, S. U., ... Trivedi, J. (2025). **Dissecting the molecular landscape of Parkinson's disease and Parkinson's disease dementia using highly efficient snRNA-seq (HIF-snRNA-seq)** *bioRxiv*. DOI