Saksham Bassi

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Education

- **New York University - Courant Institute of Mathematical Sciences** GPA - 3.7/4.0
  Master of Science in Computer Science - focus on Machine Learning *May 2023*
- **University of Pune** GPA - 8.67/10
  BE in Information Technology *June 2019*

Skills

Languages: Python, Java, C++, Node.js, HTML, CSS, R, Git
Databases: SQL, DynamoDB, MySQL, MongoDB, CosmosDB
Tools: PyTorch, Apache Airflow, HuggingFace, AWS Lambda, Flask, Google Cloud Platform, Apache Spark, Docker

Experience

- **CILVR Lab, NYU** New York, New York
  ML Researcher *Sept 2022 - Present*
  - Analyzing Large Language Models (LLMs) and objectives on zero-shot cross-lingual transfer to low resource languages. [*PyTorch, HuggingFace*] [code]
  - Examining the hypothesis that flatter minima corresponds to better generalization using visualization & measures.
- **Amazon** Seattle, WA
  Software Development Engineer Intern *May 2022 - Aug 2022*
  - Implemented a new notification service that sends push notification when a payment is failed in Amazon Care.
  - Designed a fast and simplified system design for the service and wrote unit tests to make the system fault-tolerant. [*Java, AWS Lambda, DynamoDB*]
- **Glance, InMobi Group** Remote
  Data Scientist II *Apr 2021 - Aug 2021*
  - Built end-to-end exploration-feed ML infrastructure for millions of daily users to improve recommendations.
  - Integrated Node2Vec model to learn user embeddings and automated execution through Airflow.
  - Improved user engagement by 30% using recommendations from top-k creators. [*Python, PySpark, Airflow*]
- **HSBC** Pune, India
  Software Engineer *July 2019 - Apr 2021*
  - Devised logging architecture to monitor application and on-premise logs for critical alerting. Saved $3M annually which were spent on proprietary logging software. [*Fluentd, Grafana, GCP, Python*]
  - Created a system to automate handling of Virtual Machines and to incorporate alerting.
  - Led the development of a mailing service to map and send financial documents to clients.[*Java, Microsoft EWS*]
- **Asquared IoT** Pune, India
  ML Engineer (Intern) *June 2018 - June 2019*
  - Built a hybrid system of Neural Net (to denoise audio) and CNN (on spectrograms) to qualitatively assess industrial processes. [*Flask, Keras, HTML, CSS*]

Projects

Visualizing loss landscape of Large Language models (LLMs), NYU [report], [poster] Fall 2022
- Implemented an empirical visualization setup to compare large models to investigate flatness hypothesis.
- Devised a sharpness measure to calculate the flatness of loss landscape.

Universal-Dependency-BERT: token classification of dependency graph and POS tags, NYU Fall 2022
- Built framework for predicting dependency graph and POS tags using fine-tuning of BERT for multiple languages achieving 0.8 UAS and 0.74 LAS.

Transformer encoder for Neural Machine Translation, NYU Fall 2022
- Implemented a Transformer based encoder for Neural Machine Translation of English to French, BLEU score $\approx$ 25.12.

Learning High-Dimensional Causal Effect, NYU [code] Spring 2022
- Proposed a high-dimensional causal dataset generation to explore Deep-Learning models like ResNet & Transformers.

Deep Learnt variable star classification, IUCAA [article] Fall 2019
- Built a one-dimensional hybrid model of a convolutional network and LSTM to classify variable star classes to speed up categorization - **10x faster** improvement