Anuj Nagpal

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PRIMARY INTERESTS

• Machine Learning • Software Engineering • Applied Statistics

WORK EXPERIENCE

META AI | Facebook Marketplace, Menlo Park, California
Machine Learning Engineer (Internship) June 2022 – Sep 2022

- Worked on a **multimodal framework (MMF)** for extracting product attributes from marketplace listings that can be used in search, ranking and recommendation.
- Designed an **end-to-end machine learning workflow** ranging from developing the training data pipeline to final model evaluation.
- Achieved **90%+ accuracy** with Meta AI's CompNet trained with a hierarchical vision transformer based image encoder.

GOLDMAN SACHS | Global Markets Division, Bengaluru
Associate (Full Time) Jun 2018 – Jul 2021
Summer Analyst (Internship) May 2017 – Jul 2017

- Worked as an **algorithmic market making developer** with area of focus in electronic and automated trading of fixed income products.
- Developed and supported applications that **stream algorithmic prices** to electronic trading platforms as well as **automatically quote** a subset of the incoming trade inquiries using live market data, product attributes, and manual trader inputs.
- Built **robust and scalable systems** that can handle heavy inquiry load and rapid market movements for trading desks based in New York, London and Hong Kong.

KEY PROJECTS

Natural Language Generation with Inverse Q-Learning

- Designed and built an **adversarial-free imitation learning approach** for natural language generation that gives lower text perplexity than maximum likelihood based models.

Knowledge Graph Completion with GNN

- Implemented **graph neural network (GNNs)** models including **TransE, ComplEx and RotatE** for triple prediction in knowledge graphs and evaluated them on Hits@K, Mean Rank (MR) and Mean Reciprocal Rank (MRR) metrics.

Score Generative Modeling with Multi Sample Denoiser

- Developed a **denoising autoencoder** based approach for **score value estimation** that can be scaled to multiple noisy samples for faster training and better image generation quality.

Neural Models for Granger Causality Detection

- Implemented a class of neural network based **non-linear models for Granger causality detection** which are capable of capturing long term dependencies between various time series.

EDUCATION

STANFORD UNIVERSITY
M.S. in Computational and Mathematical Engineering
2021-23 | GPA: 4.2/4.0

IIT KANPUR
B. Tech. in Computer Science and Engineering
2014-18 | GPA: 9.3/10.0

SKILLS

PROGRAMMING
Python • C++ • Java • R • Scala
JavaScript • SQL • Bash • HTML/CSS

LIBRARIES
PyTorch • TensorFlow • Keras • PyG
JAX • CVXPY • PySpark • Numpy

KEY COURSES

Natural Language Processing
Deep Learning for Computer Vision
Machine Learning with Graphs
Deep Generative Models
Deep Multi-Task and Meta Learning
Probabilistic Machine Learning
Time Series Analysis
Applied Stochastic Processes
Convex Optimization
Principles of Database Systems

OTHER EXPERIENCE

Teaching Assistant Apr 22 - Jun 22
• Distributed Algorithms and Optimization (CME323), Stanford University

Teaching Assistant Jan 22 - Mar 22
• Generative Adversarial Networks (CS236G), Stanford University

Course Tutor Jan 18 - Apr 18
• Fundamentals of Programing (ESC101), IIT Kanpur

Coordinator Jul 16 - Jul 17
• Association of Computing Activities (ACA), IIT Kanpur