Anuj Nagpal

+1-(650)-441-6529 | anujnag@stanford.edu | anujnagpal96@gmail.com

PRIMARY INTERESTS

• Machine Learning Engineering • Deep Learning • Generative Models
• Graph Machine Learning • Natural Language Processing

WORK EXPERIENCE

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 corporate bonds, credit default swaps, and money market 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 while collaborating with developers and traders scattered across New York, London and Hong Kong.

KEY PROJECTS

KNOWLEDGE BASE GRAPH ATTENTION NETWORKS*

- Working on embedding-based **Knowledge Base Graph Attention Networks (KBGATs)** proposed by Nathani et al. that incorporate both relational edges as well as neighbouring node features in their attention mechanism for triple prediction.

SCORE MATCHING ++*

- Building new **Score-Based Deep Generative Models** from stochastic differential equations by Song et al. that combines ideas from multi-sampling denoising approach and importance weighted autoencoders (IWAE).

NEURAL GRANGER CAUSALITY*

- Working on a class of non-linear models using **neural networks for Granger causality detection** by Tank et al. that is able to capture long term dependencies between various time series.

PROBABILISTIC WORD SENSE EMBEDDINGS

- Developed a **Gaussian mixture model for probabilistic word vector generation** on top of prior work by Athiwaratkun et al. that reduces the number of local word specific parameters by using a set of global basis vectors.

DEEP REINFORCEMENT LEARNING VS. ATARI PONG AI

- Implemented a **double duelling deep Q network** followed by a **deep policy gradient network** that was eventually able to beat the Atari Pong emulator provided by OpenAI gym.

** - In Progress*

EDUCATION

STANFORD UNIVERSITY
2021-23 | M.S. in Computational and Mathematical Engineering

IIT KANPUR
2014-18 | B. Tech. in Computer Science and Engineering
- Academic Excellence Award

SKILLS

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

LIBRARIES
PyTorch • TensorFlow • Keras • PyG
JAX • scikit-learn • Pandas • Numpy

COURSEWORK

Deep Generative Models*
Machine Learning with Graphs*
Natural Language Processing#
CNNs for Visual Recognition#
Reinforcement Learning#
Probabilistic Machine Learning
Time Series Analysis
Machine Learning Techniques
Deep Learning
Applied Stochastic Processes
Convex Optimization#
Probability and Statistics
Principles of Database Systems
Design and Analysis of Algorithms
Computing Laboratory

** - In Progress, # - Upcoming*

POSITIONS HELD

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

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

- Secretary Jul 15 - Jul 16
Programming Club, IIT Kanpur