Anuj Nagpal

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PRIMARY INTERESTS

Deep Generative Models • Computer Vision • Graph Machine Learning
Natural Language Processing • Reinforcement Learning

WORK EXPERIENCE

GOLDMAN SACHS | Global Markets Division, Bengaluru
Associate — Jun 2018 – Jul 2021
Summer Analyst — May 2017 – Jul 2017

- Worked as a **quantitative and 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 the inevitable market movements and new products while collaborating with peers and trading desks scattered across New York, London and Hong Kong.

TEACHING EXPERIENCE

COURSE TUTOR | IIT Kanpur
Fundamentals of Programming (ESC101) — Jan 2018 – Apr 2018

- Designed exams, quizzes and lab assignments for a **class size of 470 students** and supervised them with a team of teaching assistants, which helped students to assess their learning of the course contents
- Conducted **weekly tutorials** to help students in grasping the concepts by clarifying their doubts, along with **lab sessions** for applying these concepts real-time to build programming solutions.

KEY PROJECTS

PROBABILISTIC WORD SENSE EMBEDDINGS
Prof. Piyush Rai | Report

- Developed a **Gaussian mixture model for probabilistic word vector generation** having reduced number of local word specific parameters by modeling them as a linear combination of few global basis vectors.

DEEP REINFORCEMENT LEARNING AGAINST PONG AI
Prof. Piyush Rai | Report | Video

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

GDP FORECASTING USING TIME SERIES MODELING
Prof. Amit Mitra | Report

- Modeled Indian GDP data as an **ARIMA process** by using R implementations of Holt Winters Seasonal Smoothing, ADF Test, KPSS Test, Ljung Box Test and AIC/BIC criteria for deciding order.

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

SOFTWARES / LIBRARIES
TensorFlow • PyTorch • Keras
scikit-learn • Pandas • Numpy • Git

COURSEWORK

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

** - In Progress, # - Upcoming*

POSITIONS HELD

- Coordinator — Jul 16 - Jul 17
Association of Computing Activities (ACA), IIT Kanpur
- Secretary — Jul 15 - Jul 16
Programming Club, IIT Kanpur

LINKS

LinkedIn: **linkedin.com/in/anujnag/**
Homepage: **anujnag.github.io**