

Deepak Kumar Gouda

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Education

Master of Science

Computer Science - Machine Learning

Georgia Institute of Technology

Aug 2022 - May 2024

Bachelor of Technology

Mathematics and Computing, GPA 8.80/10.0

Indian Institute of Technology, Guwahati

July 2016-July 2020

Experience

• Kivi Capital

Software Developer

India

June 2020 - May 2022

- Led the design and development of data snap and trade execution systems which capture upto **50 GB** data packets in **6 hours** ; the execution algorithm executes over 100 trades/day
- Modeled the price movement of financial assets to identify **13** trading patterns in 1 year
- Maintained a portfolio of trading strategies garnering **100%** returns in **4 months**
- *Key Technologies* - Socket Programming, Multi-Threaded Systems, C++, Pandas

Selected Projects

• Securing Internet Routing from BGP hijacks

Prof. Cecilia Testart, College of Computing

Georgia Tech

Fall 2022

- Studying the impact of Resource Public Key Infrastructure deployment on the security of inter-domain routing protocol BGP

• Mini-Internet (Course Project)

Prof. Alberto Dainotti, College of Computing

Georgia Tech

Fall 2022

- Enabling end-to-end connectivity across 70 virtual Autonomous Systems (ASes) composed of hundreds of network devices
- Tasks include developing routing tables, implementing OSPF and BGP on virtual FRR Routers to establish intra & inter-domain connectivity across numerous hosts, routers and switches

Publications

• Design and Validation of BlockEval, A Blockchain Simulator

Deepak Kumar Gouda, Shashwat Jolly & Dr. Kalpesh Kapoor

COMSNETS 2021

- Developed a simulation framework to generate network level data of large Blockchain topologies; proposed a universal validation pipeline to evaluate the correctness of generated data samples
- Simulated data of *BlockEval* was compared against actual Bitcoin network to estimate accuracy

• Construction of Bootstrap Confidence Intervals for Univariate Stock Price Signals

Shankhajyoti De, Arabin Kumar Dey & Deepak Kumar Gouda

Annals of Data Science, 2020

- Proposed a novel way to construct Bootstrap confidence intervals of signals predicted by LSTMs
- Developed a penalty function based on L_2 distance of mean series between original and bootstrap samples to calculate the optimal block length while bootstrapping

Relevant Coursework

GRADUATE Machine Learning, Advanced Computer Networks, Graduate Algorithms

UNDERGRADUATE Computer Vision, Parallel Computing, Generalized Linear Models, Matrix Computations, Computer Networks

Technical Skills

LANGUAGES Python, C/C++, MATLAB, C#, Bash

FRAMEWORKS PyTorch, Boost, Pandas, Numpy, Scipy, Pandas, Scikit, SimPy

Achievements

- **ACM HotNets 2022** : Awarded student travel grant for current research on RPKI deployment
- **InfosecIITG** : Founding member of the Information Security group, ranked **298**(in 2020) globally
- **Defence Research and Development Organization, India** : Runners-up in national competition with over 100 participants for development of underwater surveillance systems *DRUSE 2018*
- **Microsoft Code.Fun.Do++ 2018** : Runners-up for developing a disaster management system
- **Joint Entrance Examination 2016**: Among top **0.1%** out of 1.2 million students in India