Deepak Kumar Gouda

(+1) 404-948-7772 deepakgouda@gatech.edu deepakgouda deepakgouda.github.io

Education

Master of Science — **Georgia Institute of Technology**
Computer Science - Machine Learning — *Aug 2022 - May 2024*

Bachelor of Technology — **Indian Institute of Technology, Guwahati**
Mathematics and Computing, GPA 8.80/10.0 — *July 2016-July 2020*

Experience

- **Kivi Capital** — **India**
  Software Developer — *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

- **Development of Secure Internet Routing** — **Georgia Tech**
  Prof. Cecilia Testart, College of Computing — *Fall 2022*
  - Developing features to identify invalid BGP prefix announcements by Autonomous Systems (AS) and secure internet routing
- **Mini-Internet (Course Project)** — **Georgia Tech**
  Prof. Alberto Dainotti, College of Computing — *Fall 2022*
  - Enabling end-to-end connectivity across around 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** — *COMSNETS 2021*
  Deepak Kumar Gouda, Shashwat Jolly & Dr. Kalpesh Kapoor
  - 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 & Extracurricular

- **InfosecIITG :** Founding member of the Information Security group, ranked **298***(in 2020)* globally
- **Analyze This 2018 :** Top **1%** among 2700+ teams in flagship hackathon by American Express
- **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