Deepak Gouda

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Education

Master of Science — **Georgia Institute of Technology**
Computer Science, GPA 4.0/4.0 — *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

- **Internet Initiative of Japan** — **Tokyo, JP**
  Research Intern, Advisor - Romain Fontugne — *June 2023 - July 2023*
  - Identified routing behavior of organizations by size, Regional Internet Registry (RIR) and business sector; also identified adoption trends in Resource Public Key Infrastructure (RPKI) infrastructure.
  - Differentiated BGP behavior of Autonomous Systems (ASes) adopting RPKI from ASes not adopting RPKI; found higher level of instability in AS-paths for non-RPKI ASes.
  - *Key Technologies - Computer Networking, Linux, DNS, Routing, BGP*
- **Kivi Capital** — **Delhi, IN**
  Systems 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
  - *Key Technologies - Socket Programming, Multi-Threaded Systems, C++, Pandas*

Selected Projects

- **Prefix2Org - Tracing the owners of Internet** — **Georgia Tech**
  Prof. Cecilia Testart, College of Computing — *Spring 2023*
  - Developed a scalable mapping of IP prefixes to owners using WHOIS records.
  - Performed text lemmatization, entity resolution, & fuzzy-string matching to extract useful information from WHOIS text fields and cluster organization information.
  - Used Prefix2Org for several studies, such as classification of prefixes by business affiliations and profiling RPKI adoption & BGP prefix origin policies of organizations.
- **Mini-Internet** — **Georgia Tech**
  Prof. Alberto Dainotti, College of Computing — *Fall 2022*
  - Enabled end-to-end connectivity across 70 virtual Autonomous Systems (ASes) composed of hundreds of network devices (hosts, routers, and switches).
  - Created routing tables, implementing OSPF, eBGP, and iBGP on virtual FRR routers to establish intra & inter-domain connectivity across the network.

Selected Coursework

Internet Data Science, Securing Internet Infrastructure, Advanced Computer Networks, Graduate Algorithms, Big Data Systems, Parallel Computing, Deep Learning for Text Data

Technical Skills

Python, C/C++, MATLAB, Bash, Jupyter, Pandas, Numpy, PyTorch, Scikit, Docker, Airflow, Git, Apache Spark, Hadoop, SQL, MySQL, Postgres, Google BigQuery, Data Analysis, Software Engineering, Machine Learning, Natural Language Processing, Statistics, Computer Networking, TCP/IP, UDP, DNS, Routing, Linux/Unix

Achievements and Services

- **Student Travel Grant:** *ACM HotNets, 2022*, *ACM IMC, 2023* - for current research on RPKI deployment
- **ACM CoNEXT 2023:** Artifact Evaluation Committee
- **CS 8803 SII:** Teaching Assistant for the course on Securing Internet Infrastructure
- **InfosecIITG :** Founding member of the Information Security group, ranked **298***(in 2020)* globally
- **American Express, 2018 :** Top **1%** among 2700+ teams in Analyze This - flagship hackathon
- **Microsoft Code.Fun.Do++ 2018 :** Runners-up in coding hackathon
- **Joint Entrance Examination 2016**: Among top **0.1%** out of 1.2 million students in India

Publications

- **D. K. Gouda**, S. Jolly and K. Kapoor, "*Design and Validation of BlockEval, A Blockchain Simulator*" International Conference on COMmunication Systems & NETworkS (**COMSNETS**), 2021
- De, S., Dey, A.K. & **Gouda, D.K.** *"Construction of Confidence Interval for Stock Prices Predicted by LSTMs".* **Annals of Data Science.** 9, 271–284 (2022)