Rajat Poovaiah

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Education

- **Stony Brook University** — Stony Brook, NY
  Masters of Science in Computer Science; GPA: 3.96 — *Aug 2019 - Dec 2020*
- **Indian Institute of Technology, Kanpur (IITK)** — Uttar Pradesh, India
  Bachelor of Technology in Aerospace Engineering — *Aug 2011 - July 2015*

Publications

- **A method and system for dynamically generating medical reports**: **Indian Patent Office, Patent No.: 311461** Duraikrishna Selvaraju, Kumudini Kakwani, Rajat Poovaiah et. Al.

Work Experience

- **GlowRoad** — Bangalore, India
  Technical Consultant — *May 2019 - July 2019*
  - Tuning the parameters of the Java Virtual Machine to increase application stability and reduce resource utilization, thereby increasing uptime by 5% and reducing per instance costs by 50%
  - Automating and streamlining deployments to allow for seamless autoscaling and configuration management
  - Setting up monitoring utilities including the ELK (Elastic-Logstash-Kibana) stack for centralized logging and Sentry for error management and alerting
  - Establishing and encouraging adoption of core guidelines and best practices among the technology team and its shareholders

- **SigTuple** — Bangalore, India
  Senior Computer Scientist — *June 2017 - Aug 2018*
  - Designed and prototyped a program to run analyses directly on edge devices using TensorFlow to reduce turnaround times (by 38%) and alleviate the need for internet access
  - Built a distributed job scheduling cluster to optimize resource utilization during the training of deep neural networks over large volumes of medical image data thereby cutting cloud costs by 40%
  - Responsible for scaling the in house distributed, deep learning platform built on TensorFlow and Apache Spark through improvements to the architecture, data partitioning strategies and readability.
  - Redesigned the platform as an ecosystem of python packages each supporting a different use case (analysis, training, data processing)
  - Architected and implemented a data access layer to act as an abstraction between applications requesting data from multiple cloud providers distributed as clients in multiple languages (python, javascript) with a unified interface to interact with a central server.
  - Streamlined development by deploying and maintaining a continuous integration and delivery (CI/CD) pipeline for core projects and publishing a backbone/guideline for future projects

- **Finomena** — Bangalore, India
  Software Development Engineer — *Sep 2016 – May 2017*
  - Spearheaded efforts to increase the accuracy of an in house bank statement parser from approximately 65% to 97.3% with the help of computer vision and NLP techniques
  - Migrated from a synchronous data upload model to a distributed, publish-subscribe based model to offset response times and build a more robust, reliable system of ingestion of large volumes of user data.
  - Optimized multiple facets of our loan management system using a combination of query optimization, index tuning, result caching and network optimization

- **Quikr/Commonfloor** Bangalore, India
  Software Development Engineer *June 2015 - Aug 2016 (By Acquisition, Commonfloor)*
  - Integral team member in piloting a stack change to node.js and ReactJs.
  - Implemented a feedback loop for the recommendation engine to improve recommendations on similar items in inventory.

- **Bell Helicopters (Textron India Pvt. Ltd.)** Bangalore, India
  Intern *Summer 2014*
  - Developed a rotor analysis solver based on the Blade Element Theory and analysis of a flapping wing by extending the open source C++ toolbox OpenFOAM.

- **Bharat Heavy Electricals Limited** Bangalore, India
  Intern *Summer 2013*
  - Studied the programming of microcontrollers and custom bootloaders and their implementations in improving the efficiency and robustness of control systems designed for power plants.

Skills Summary

- **Languages**: Python, C, Java, PHP, Go, MATLAB, FORTRAN
- **Relevant Coursework**:
  - Introduction to Computer Vision - Image Processing, Feature extraction, Classification, Neural Networks, GANs, Object Tracking
  - Randomized Algorithms - Linearity of expectation, Pattern Matching, Markov Chains, Randomized Incremental Construction, Random Walks
  - Computational Geometry - Classifiers, Clustering, Motion Planning, Nearest Neighbor Detection
  - Discrete Mathematics - Geometric view of GANs, Optimal Transport Theory
  - Analysis of Algorithms - Algorithm design and analysis, Complexity Theory

Research

- **Course Project, Computational Geometry**: *Social Distancing as a Motion Planning Problem*
- **Course Project, Discrete Mathematics**: *Multi-marginal optimal transport :Application to the kidney exchange problem*
- **Undergraduate Research Project**: *Direct Numerical Simulation of 2D transonic flow around airfoil undergoing pitching oscillation (Numerical Analysis/Scientific Computing)*

TEACHING EXPERIENCE

- **Teaching Assistant, Stony Brook University**: *CSE307, Principles of Programming Languages*
- **Teaching Assistant, Stony Brook University**: *CSE215, Foundations of Computer Science*
- **Academic Mentor, Counseling Service, IIT Kanpur**: *ESC101, Fundamentals of Computing*
- **Peer Mentor, CSE Dept, IIT Kanpur**: *ESC101, Fundamentals of Computing*

Societies

- **Committee Head, Group for Energy and Environment Engineering, IIT Kanpur**:
  - Responsible for conducting various activities and competitions to raise environmental awareness
- **Committee Head, English Literary Society, IIT Kanpur**:
  - Responsible for conducting literary and debate activities and parliamentary debates and training teams to compete

Honors and Awards

- **Certificate of Merit**, Indian National Mathematics Olympiad
- **Honorable Mention**, Singapore Mathematical Olympiad (Junior Section)
- **Certificate of Merit**, Indian National Olympiad in Informatics