Aatish Varma

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Education:

New York University – College of Arts and Sciences — New York, New York
B.A in Computer Science, Minor in Mathematics — *September 2016 – May 2020*

- **GPA**: Cumulative – 3.73/4.00, Major – 3.81/4.00
- **Relevant Coursework:** Networks and Mobile Systems (Graduate), Programming Languages (Graduate), Machine Learning, Operating Systems, Algorithms, Theory of Computation, Linear Algebra, Statistics

Skills:

- Programming:
  - Proficient: Python 3, Java, JavaScript (Node, React, Express), New Relic
  - Elementary Proficient: Rust, SQL
- Technologies: AWS (EC2, Timeseries), PostgreSQL

Experience:

NYU Computer Science Department — New York, New York
Research Assistant, Systems and Networking Lab — *October 2018 – May 2020*
Supervisor: Professor Anirudh Sivaraman, Ph.D.

- Worked on multiple projects (see **Chipmunk** and **Druzhba** below) at the intersection of Program Synthesis, Computer Networks, and Computer Architecture
- Published 3 papers in top venues (ACM SIGCOMM, ACM HotNets)

NYU Computer Science Department — New York, New York
Head Teaching Assistant, Undergraduate Computer Networks — *September 2019 – December 2019*
Instructor: Professor Aurojit Panda, Ph.D.

- Held office hours weekly, answered student questions
- Taught topics related to BGP, intra-domain routing, and router hardware

General Electric (GE) - Digital — San Ramon, California
Software Engineering Intern — *May 2018 – August 2018*

- Added audit functionality to the Time Series Go Pipeline to monitor processes using the Predix SDK
- Implemented Amazon S3 Wrapper Interface for Asynchronous Query Storage in Java
- Queried 500,000 data points from multiple PostgreSQL databases and generated data visualizations

Projects:

- **Chipmunk**: Synthesis-Aided compiler for Programmable Switches
  - Technologies Used: Python, C++, Z3, Sketch, ANTLR
  - Developed a compiler which compiles C-like code to a programmable switch using program synthesis and algorithmic techniques
- **Druzhba**: Network Switch Hardware Simulator
  - Technologies Used: Rust, LALRPOP (Rust Parser Generator), RISC-V
  - Developed a hardware simulator in Rust to allow network operators to test data plane programs before permanently setting their hardware configurations
- **Bhaasha:** Hindi Part of Speech Tagger (***Voted best final project by class in undergraduate NLP Fall 2018***)
  - Technologies Used: Python
  - Developed a Hidden Markov Model (HMM) that tagged unseen Hindi words with 82% accuracy

Publications:

- **Compiler Testing Through Programmable Switch Simulation**
  Michael Dean Wong, **Aatish Varma**, Anirudh Sivaraman
  ACM CAL 2020 (In Submission)
- **Switch Code Generation using Program Synthesis**
  Xiangyu Gao, Taegyun Kim, Michael Dean Wong, Divya Raghunathan, **Aatish Varma**, Pravein Govind Kannan, Anirudh Sivaraman, Srinivas Narayana, Aarti Gupta
  ACM SIGCOMM 2020
- **Autogenerating Fast Packet-Processing Code Using Program Synthesis**
  Xiangyu Gao, Taegyun Kim, **Aatish Kishan Varma**, Anirudh Sivaraman, and Srinivas Narayana
  ACM HotNets 2019