Arvind Ramaswami

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LinkedIn: http://linkedin.com/in/arvind-ramaswami GitHub: https://github.com/arvindr9
Website: https://arvindr9.github.io/ Codeforces: https://codeforces.com/profile/arvindr9
Interests: Machine Learning, Algorithm Design, Optimization

Education

Georgia Tech (Fall 2017 - Fall 2020): BS Computer Science. (Threads: Intelligence and Theory)

Georgia Tech (Spring 2021 - Fall 2022): MS in Computer Science (Specialization: Machine Learning)

Work Experience

PerfectRec - *Machine Learning Engineer Intern* **June 2022 - Aug 2022**

Built the startup's first ML-powered product recommendations systems, using AWS Sagemaker. Advised by Professor Josh Hug.

Amazon - *Software Development Engineer (SDE) Intern* **May 2020 — Aug 2020**

Designed a ranking system to match advertisers to partners for the Amazon Advertiser Partner Network. Performed cluster analysis on the advertiser data.

Lawrence Livermore National Laboratory - *Software Engineer Intern* **May 2019 — Aug 2019**

Developed a testing framework for the National Ignition Facility (NIF), the largest laser facility in the world. Proposed data science techniques to validate the calculations.

Skills

Programming languages: C++, Python, Java, Javascript

Competitive programming: ACM ICPC World Finalist (Rank 6 out of 50 teams in the North America Championship), Round 3 of Google Code Jam (2021), Top 200 in Round 3 of Meta Hacker Cup (2022)

Research

Algorithms Research - *Advisor: Richard Peng* **Jan 2022 - Dec 2022**

Developed high-accuracy algorithms for the regularized optimal transport problem.

ML Research - *Advisor: Jacob Abernethy* **Sept 2019 — Oct 2021**

Evaluated the effectiveness of different optimization algorithms such as Mirror Prox in the adversarial learning problem. Also developed adversarial robustness algorithms using multiclass boosting.

ML Research - *Advisor: Sebastian Pokutta* **Jan 2018 — May 2019**

Engineered adversarial attacks on random forest classifiers and developed methods to make them more robust.

Publications / Submitted Papers

Sinkhorn has Exponential Convergence under Regularization. Preprint (2022). With Richard Peng, Yang Liu, Jingbang Chen.

Leadership

Georgia Tech Programming Team - *(President from Spring 2022 - Fall 2022)* **Aug 2017 — December 2022**

Prepared content and lectured for weekly meetings in topics such as dynamic programming, data structures, and combinatorial optimization. In charge of arranging team practices for ICPC.

Big-O Theory Club - (*President from Fall 2020 - Spring 2021)* **Aug 2017 — May 2021**

Gave talks about theoretical computer science (examples of topics discussed: randomized algorithms, flows) and invited other students to give talks about their research.

Projects

ReconBlind Multi-Chess Agent **Nov 2020**

Worked on a team (for the class *Robot Intelligence: Planning*) to create an agent that would play Reconchess. Based our agent on David Silver's AlphaGo paper and incorporated a policy neural network with Monte-Carlo Tree Search.

WeLocate **Oct 2017**

Built a website that uses Yelp's API and AWS Machine Learning to find where to open a small business. Received first-place awards at VandyHacks for the Most Disruptive Hack and the Best Financial Hack.

Miscellaneous

Math Contests: Represented Georgia for the American Regions Mathematics League (ARML) in 2015 and 2017, qualifier for American Invitational Mathematics Exam (AIME) in 2017.

Violin: Previously a member of the Atlanta Symphony Youth Orchestra, Georgia All-State Orchestra. Currently playing in the Georgia Tech Symphony Orchestra. Also learned conducting under Dr. Chaowen Ting.

Spoken Languages: English, Spanish, Tamil, Chinese.