

Curriculum Vitae

Vaidehi Srinivas

Contact

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Education

September 2021 - current

Ph.D. in Computer Science

Theory Group at Northwestern University, Evanston, Illinois

Advisor: Aravindan Vijayaraghavan

August 2016 - May 2020

B.S. in Computer Science with minor in German Studies

Carnegie Mellon University (Pittsburgh, Pennsylvania)

Research Experience

Oct 2020 - May 2021

Fulbright: Implementation of Graph Streaming Algorithms

Vienna, Austria

We worked on implementing state of the art graph streaming algorithms to compare theoretical guarantees to real-life performance. This work was done at the University of Vienna, in the Theory and Applications of Algorithms group, supervised by Prof. Christian Hallstein and Prof. Monika Henzinger, as part of a Fulbright award.

August 2019 - current

Streaming Complexity of the Experts Problem

Pittsburgh, Pennsylvania

We are working on finding upper and lower bounds on the streaming complexity of the prediction with expert advice problem. This work started as a final project in Prof. David Woodruff's course "Algorithms for Big Data." We have continued working on it since, and it is currently submitted for publication.

August 2019 - May 2020

Senior Thesis: Simpler Approximations for the Network Steiner-tree Problem

Pittsburgh, Pennsylvania

My undergraduate senior thesis, advised by Prof. Anupam Gupta, was about simplified approximations for the network Steiner-tree problem. We looked at combinatorial approximation algorithms for the network Steiner-tree problem, and showed that some could be

simplified by applying a black-box algorithm for submodular function optimization under knapsack-constraints.

June 2019 - August 2019

Comparing FTRWF and OMD_{prox} for MTS

Pittsburgh, Pennsylvania

I was an undergraduate researcher working with Prof. Anupam Gupta on a question in online algorithms. We worked to show that two approaches of algorithms, follow the regularized work function and proximal online mirror descent, actually resulted in the same algorithm for a class of problems and settings. We were able to show that the approximation ratios for these were the same for the metrical task system problem in the case of some hierarchically separated trees.

January 2019 - May 2019

Decidability of Closures of DFAs

Pittsburgh, Pennsylvania

I worked with Prof. Klaus Sutner on a problem in automata theory. We worked on showing that certain languages corresponding to the closures of DFAs were undecidable, and where in the undecidability hierarchy they lie.

August 2017 - May 2018

Sample Input to Test CPS Verifier

Pittsburgh, Pennsylvania

I worked on a project in Prof. André Platzer's group in Cyber Physical Systems. We worked on building a simulator for a train that we could use to test a verifier that would prove it's safety.

Teaching Experience

October 2020 - May 2021

Fulbright English Teaching Assistant

Vienna, Austria

I was an English teaching assistant as part of the Fulbright Combined Programs in Vienna, Austria. I was asked to teach lessons on a large variety of topics, and do individual conversation practice with students. I worked at the Billrothgymnasium and the Krottenbachgymnasium in the 19th district.

May 2020 - August 2020

Calico Summer Program

Palo Alto, California

I volunteered with Calico Youth Services to create a one week online summer program for middle school students joining their mentoring program. Calico Youth Services works to connect students from underrepresented backgrounds in the San Francisco Bay Area with mentors.

January 2020 - May 2020

TA for Algorithms

Pittsburgh, Pennsylvania

I was a teaching assistant for 15-451: Algorithm Design and Analysis at Carnegie Mellon University. My responsibilities included leading a recitation section, holding office hours, preparing and running review sessions, and grading homework and exams.

August 2019 - May 2020

After School Club Volunteer

Pittsburgh, Pennsylvania

I volunteered with FORGE at an after school homework help program for elementary school students. FORGE is a student organization that helps provide services to the local refugee community in Pittsburgh.

August 2019 - December 2019

TA for Computational Discrete Math

Pittsburgh, Pennsylvania

I was a teaching assistant for 15-354: Computational Discrete Mathematics at Carnegie Mellon University. My responsibilities included holding office hours, preparing and running review sessions, and grading homework and exams.

January 2019 - May 2019

Head TA for Intro CS Theory Class

Pittsburgh, Pennsylvania

I was head teaching assistant for 15-251: Great Ideas in Theoretical Computer Science. My responsibilities included helping write homework assignments and exams, managing the other teaching assistants, and handling logistical issues in addition to other standard TA duties.

January 2018 - December 2018

TA for Intro CS Theory Class

Pittsburgh, Pennsylvania

I was a teaching assistant for 15-251: Great Ideas in Theoretical Computer Science. My responsibilities included leading a recitation section, holding office hours, preparing and running review sessions, and grading homework and exams.

Professional Experience

May 2018 - August 2018

News Engineering Intern at Apple

Cupertino, California

I did a comparative analysis between the old and new article feed system for news articles in the Stocks app, built a program to match articles between systems for comparison, and provided feedback to engineering and publisher relations teams that was incorporated into news ranking (Used SQL, Python, and other tools)

June 2017 - August 2017

Software Engineering Intern at BlueJeans Network

Mountain View, California

I worked with authentication APIs for videoconference users, and wrote unit tests for REST APIs that used Cassandra MySQL.

Awards and Fellowships

2021 Todd M. and Ruth Warren Fellowship

Competitive fellowship for Computer Science students at Northwestern University

2020 Fulbright Combined Award for Austria

As part of this award, I worked on a research project at the University of Vienna, and was an English Teaching Assistant at two high schools.

2020 Phi Beta Kappa

2020 Andrew Carnegie Society Scholar

Outreach

January 2018 - May 2020

Women@SCS and SCS4ALL

Pittsburgh, Pennsylvania

I was an active member of Women@SCS and SCS4ALL, organizations in the Carnegie Mellon School of Computer Science that aim to increase diversity and opportunity for all students. I helped run a variety of events.