Aditya Saligrama

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Computer science major at Stanford University with experience in machine learning, systems, and security

Education

Stanford University Sep. 2020 – Jun. 2024

B.S. Candidate in Computer Science | GPA 3.90 *Stanford, CA*

- Coursework: **CS 229** (Machine Learning), **CS 224U** (Natural Language Understanding), **CS 154** (Theory of CS), **CS 111** (Operating Systems), **Math 104** (Applied Matrix Theory), **INTLPOL 268** (Hack Lab - Cybersecurity)

Experience

Research Assistant Apr. 2021 – Present

Stanford Open Virtual Assistant Lab (OVAL) | Supervised by Monica Lam *Stanford, CA*

- Work on virtual assistants to classify customer support requests with GPT-3 data augmentation

Competition Linux Lead Jan. 2021 – Present

Stanford Applied Cybersecurity *Stanford, CA*

- Responsible for securing Linux systems against external penetration testing team in competition environment
- Placed 2nd in Western Regional CCDC qualifier and regional round; 2nd in National CCDC wild card round

Research Assistant Jun. 2017 – Present

Harvard University | Supervised by Margo Seltzer, Cynthia Rudin *Cambridge, MA*

- Work on parallelizing CORELS, a machine learning algorithm that builds human-interpretable rule list models
- Co-first author of upcoming paper on systems optimizations that allow algorithm to scale to large datasets
- Implemented public web UI and R language API

Engineering Intern Nov. 2020 – Apr. 2021

Uptycs *Waltham, MA*

- Deployed production feature to `osquery` monitoring software to inspect and detect malware in Java packages

Research Science Institute Intern Jun. 2019 – Aug. 2019

Akamai Labs *Cambridge, MA*

- Deployed realtime garbage collection monitoring system for Go language programs with per-thread detail

Research Assistant Jan. 2018 – Jun. 2020

MIT PRIMES *Cambridge, MA*

Project I: Rust Concurrency Analysis | Supervised by Jon Gjengset, Frans Kaashoek *Jan. 2018 – Apr. 2019*

- Developed set of fast, lock-free concurrent hashmaps for the Rust language with 100+ stars on GitHub
- Presented report on how the Rust language helps and hurts developers in writing concurrent code

Project II: Adversarial Machine Learning | Supervised by Aleksander Madry *Jan. 2019 – Jun. 2020*

- Developed ensemble schemes that improve accuracy while preserving adversarial robustness vs. single model
- Presented at ICLR 2020 workshop on trustworthy machine learning (44% acceptance rate)

KnowBias: an award-winning AI algorithm that detects political polarization in online articles in real time

- Paper published as an AAAI 2020 Student Abstract (48% acceptance rate)

Publications

A. Saligrama, G. Leclerc. Revisiting Ensembles in an Adversarial Context: Improving Natural Accuracy. *ICLR 2020 Workshop on Towards Trustworthy ML: Rethinking Security and Privacy for ML (ICLR:TML'20)*, 2020.

A. Saligrama. KnowBias: Detecting Political Polarity in Long Text Content. *AAAI 2020 Student Abstract and Poster Program (AAAI:SAP'20)*, 2020.

A. Saligrama. KnowBias: A Novel AI Method to Detect Polarity in Online Content. *arXiv:1905.00724*, 2019.

A. Saligrama, A. Shen, J. Gjengset. A Practical Analysis of Rust's Concurrency Story. *arXiv:1904.12210*, 2019.

N. Larus-Stone, E. Angelino, D. Alabi, M. Seltzer, V. Kaxiras, **A. Saligrama**, C. Rudin. Systems Optimizations for Learning Certifiably Optimal Rule Lists. *SysML Conference*, 2018.

Selected Awards and Honors

- 2nd place team, Western Regional CCDC; 2nd place team, National CCDC wild card round (2021)
- Congressional App Challenge Winner, Massachusetts 5th District (2018)
- USA Computing Olympiad, Gold Division (2018 – 2020)