Thach, Andrew (M.S. Artificial Intelligence focused Computer Science)

thachandrew.github.io ---------- **omitted**

TECHNICAL SKILLS/INTERESTS

Research: Focus on cutting edge implementations for efficient solutions. Regularly attends ML/AI conferences. Also attends IAP (Industry-Academia Partnership) workshops as well. https://www.industry-academia.org/workshops.html

Programming: Full stack developer. Experienced with Git source control and Arch Linux. Productive with any tool needed for the job. https://github.com/ThachAndrew

Dev Ops: Can build, maintain, and secure autograding pipelines, custom hypervisors and other servers.

Communications: Scrum/Agile methodology.

EXPERIENCE

Graduate Student Researcher, University of California-Santa Cruz **Santa Cruz, CA**

ML, AI, Statistical Relational Learning https://lings.org/ *AUG 2021 -- Present*

- Involved in AAAI workshops and conferences. Our research succeeds in paper acceptances which brings our lab more funding and promotions.
- We focus on statistical relational learning, probabilistic reasoning and scalable inference, and their applications to problems in computational social science, knowledge discovery, data mining, and computational biology. On the theoretical side, we introduce new theory and algorithms for efficient reasoning, learning, and inference. On the practical side, we apply our methods on a range of applications including user modeling, explainable recommender systems, and social good.

Teaching Assistant, University of California-Santa Cruz **Santa Cruz, CA**

Assisted professors for many AI and ML courses *JAN 2018 -- Present*

- Create coursework, build autograding infrastructure, hold office hours and discussion sections, grade, and mentor projects in areas of artificial intelligence and machine learning.
- Here's a subset of a curriculum I helped developed: https://github.com/ucsc-cse-40

Computer Science Tutor, University of California-Santa Cruz **Santa Cruz, CA**

- Tutored multiple different undergraduate course *DEC 2018 -- MAR 2020*
- Helped debug student programs with data structures and AI search algorithms.
- Languages involved were C++ and Python.

Group Tutor, University of California Santa Cruz **Santa Cruz, CA**

Group Tutor for two of Prof Lise Getoor's classes *Winter 2020-Current*

- Lead Zoom section rooms, poster and discussion sessions,
- Wrote grading scripts, monitored Piazza (a student help forum), maintained Canvas, and tutored individually/congregately.
- Contribute to Piazza (a student help forums) to help students understand course content.

Research Assistant, University of California Santa Cruz **Santa Cruz, CA**

Research assistant for Prof Lise Getoor *Winter 2020-Current*

- Reshape courses (“Ethics and Algorithms” and “Artificial Intelligence”) for the online world.
- Create researchable course content relevant to today’s current issues (COVID, elections, and ethical AI)
- Created technical labs designed to teach students concepts about creating ethical AI.

Computer Architecture Reader, University of California Santa Cruz **Santa Cruz, CA**

Grader and class moderator for Prof Heiner Litz *SPRING 2019*

- Graded students work: homework, programs, exams.
- Contribute to Piazza (a student help forums) to help students understand course content.

Algorithms Lab Tutor, University of California Santa Cruz **Santa Cruz, CA**

Algorithms Lab Tutor for Prof Shel Finkelstein *WINTER 2019*

- Lead lab sections for the class Algorithms and Abstract Data Types.
- Assist and tutor students with proofs and algorithms in C, Git, Eclipse, and Bash command line.

STEM and Math Learning Center, Cabrillo College **Aptos, CA**

Tutor *AUG 2017 --AUG 2019*

- Serve students coming for drop-in tutoring.
- Topic were: Computer science, physics, math (calculus, linear algebra, differential equations)

Supplemental Instruction, Cabrillo College **Aptos, CA**

Supplemental Instruction Leader *AUG 2016 -- AUG 2017*

- Lead SI sessions (workshops) for precalculus.
- Assist and tutor students during and after class.

Selected Projects

Resilient and Renewable Electrical Energy Systems Laboratory:

- create a front-end infrastructure for the PG&E power grid
- monitors voltages all around the map and helps customers understand their power status
- My contributions are in this GitHub: (currently it’s private)

  https://github.com/seadsystem/RREES-Power-Map

Nutanix, Detecting Ransomware in the Hypervisor Layer:

- Detect ransomware (cheaply) in virtualized environments.
- Used a hybrid ML approach which continuously monitors ransomware attacks from the hypervisor layer.
- The presentation below details our first successful release.
- https://docs.google.com/presentation/d/14gZBfXaeYA5MRvYjlQXHlAvuzxnp7vdflX6mG26Uqa8/edit?usp=sharing

NASA Swarmathon, Robotics Club:

- Design “search and return” algorithms that can be used for rovers on Mars.
- Traveled to Florida to compete against various colleges and universities.
- Won **$3000** for Cabrillo College in the 2016 Virtual Competition!
    - (Source: http://nasaswarmathon.com/2016-prize-awards/)

Voice Controlled Microcontroller (a primitive NLP engine), Independent Work:

- Implemented voice control to an Arduino to perform various tasks. Soon to be implemented as a smart home controller.
    - Video Demo located here! github.com/ThachAndrew/Voice-Buffer-Demo

EDUCATION

Masters in Computer Science----------University of California, Santa Cruz

JUNE 2021 - Present

- Relevant Coursework: Operating Systems, and the advanced levels of the courses I took in my undergraduate career.

Bachelors in Computer Science----------University of California, Santa Cruz

- Cumulative GPA: 3.85, Major GPA: 3.85 *JUNE 2015 - JUNE 2021*
- Relevant Coursework: Advanced C++, Artificial Intelligence, Machine Learning, Algorithms, Computer Architecture, Object Oriented Programming

Cabrillo College **Aptos, CA**

- Cumulative GPA: 4.0 *DEC 2015 - JUNE 2018*
- Relevant Coursework: Algorithms, Computer Architecture, Robotics Programming, Discrete Math.