Eli Zucker

eli_zucker@brown.edu | (650) 427-9117 | Palo Alto, CA

EDUCATION:

Brown University, Computer Science and Applied Math **Expected Graduation 2022**

- Coursework includes Computer Systems (CS33), Software Engineering (CS32), Artificial Intelligence (CS141), Machine Learning (CS142), Deep Learning (CS147), Modern Applications of Probability/Statistics (APMA174), Discrete Structures/Probability (CS22), Intro to Engineering
- TA, Artificial Intelligence (CS141)
- Avionics Software Engineer, Brown Space Engineering Club
- YHack Winner of JetBlue Prize (used route data in passenger optimization application)

Palo Alto High School **Graduated May 2018**

- Webmaster, *The Paly Voice*; Drive Team and Electronics Lead, FIRST Robotics Team; Three President's Gold Awards for Community Service; Hughes Scholarship for Academic Achievement

TECHNICAL EXPERIENCE:

Intelligent Robot Lab at Brown University, Research Assistant **2019 - Present**

- Investigating the effects of macro-actions on non-serializable black box planning problems
- Created a Rubik's Cube PDDL Domain, then directly translated it into an OpenAI Gym Environment via PDDLGym (Python)
- Planning operation performance analysis among planners (e.g. FastForward, FastDownward)
- Contributor for PDDLGym (Open-source Python library)

Microsoft Cloud + AI, Software Engineering Intern **Summer 2020**

- Developed enhanced network traffic analytics dashboard for customers of Azure Cloud (C#, TypeScript, SQL, Kusto, AzureMaps)

Google, Software Engineering Intern **Summer 2019**

- Led component design for triggering Kubernetes pipeline resources from arbitrary event payloads
- Presented Tekton Triggers, a cloud-native eventing project, at DevOps World CDF Summit
- Investigated and implemented community-requested features for Tekton Pipelines, consistently the #1 or #2 contributor on GitHub during internship period

Intuit, Intern **Summer 2018**

- Contributor for K8s Dashboard, a Google open source project, using Go and Angular
- Developed a 3D face recognition demo for KubeCon 2018 based on TensorFlow and Kubeflow
- Designed and implemented public machine learning examples with Argo container workflows

NASA Ames, Intern **Summer 2017**

- Developed prototype sensor payloads for future mars rovers (using C++, MATLAB, Python)
- Conducted tests in simulated martian terrain; published findings: Zucker, Eli (2017) "Smart Projectiles for Environmental Assessment, Reconnaissance and Sensing" *NASA Ames Research Center 2017 Office of Education Abstract Book*. NASA/SP-219877 (511). See also video: https://goo.gl/BydJLx

SKILLS:

- Java, Python, Numpy, Go, C, C++, C#, SQL, MATLAB, PHP, HTML, YAML, Javascript, Arduino
- Git, Kubernetes, LaTex, Vim, IntelliJ, Android Developer Studio, SolidWorks, Android, Linux

OTHER

- Eagle Scout, Boy Scouts of America
- Coclé, Panama, summer volunteer with Amigos de las Américas (Conversational Spanish)

ADDITIONAL INFORMATION

EXAMPLE INDEPENDENT PROJECTS

- Designed an Arduino-based module and modified an exercise bike to benefit a blind student with cerebral palsy at my highschool. The student enjoyed listening to music while biking, but teachers wanted the volume adjusted depending on her pedal speed.

- Reverse-engineered my school's ID card system and exposed a vulnerability that allowed access to every entrance on campus. Programmed an ESP32 with a motor driver and magnet wire to quickly emulate magstripe cards in doorways.

- In progress: an inexpensive, reproducible, carbon monoxide tester with adequate sensor resolution for scuba divers—It is a silent killer for divers in rural areas, and an issue I encountered while diving off the coast of northern Colombia.

EXAMPLE COURSE PROJECTS

- Led a 4-person team to modify an inexpensive Mindflex headset to transmit EEG data. I soldered and 3D-printed an attachment that sent sensor data over wifi, then wrote a Java API for parsing usable neurological information from those signals.

- Created a Google Maps clone from scratch (including A* for route-finding, KD-Trees for nearest-neighbor interfacing, Tries/LED for address autocorrection, and a Javascript rendering engine).

- Wrote an assignment around Adversarial Search, giving students space to implement generalized search functions (i.e Minimax, Alpha-Beta Pruning), including infrastructure for easily testing in games like Tic-tac-toe and Connect 4 (was TA for intro AI course).

HACKATHON AWARDS

- Led a team of four to win the JetBlue prize at YaleHack 2018 for a web app to provide optimized flight options (for example, based on turbulence, security checkpoint wait-time, airport rating, and travel distance data). Backend programmed in Python and PHP, designed with Bootstrap.

COMMUNITY SERVICE

- Eagle Scout; President's Gold Award for Community Service (x3)

- Lived in Coclé, Panama, as summer volunteer with Amigos de las Américas, with a host family; One of only two english-speakers in the village.

ADDITIONAL

- Write flight software that interacts with hardware on miniature satellites for Brown Space Engineering Club.

- Built prototype sensor payloads for Mars rovers and programmed sensor interaction and data processing during internship at NASA Ames.

- FRC Robotics (4 years) including Electronics Lead, Team Project Manager and Lead Welder. Responsible for building and fixing sensors, controls, and power for the team's robot. Engineered PoE power system.