Alex Gao

agao1@berkeley.edu, (650) 690-6679

Education

UC Berkeley, B.S. Electronic Engineering and Computer Science, 2018 - 2022, GPA: NA/4.00

Work Experience

NASA Jet Propulsion Laboratory, Pasadena, CA

Research Intern **June 2018 – July 2018**

Development of a a seismometer applicable to lunar and ocean world missions, as well as lunar strange quark nugget detection, using feedback-control circuits, low-temperature applied physics, and complex variable analysis to be 10 more sensitive than the current state-of-the-art.

NASA Ames Research Center, Moffett Field, CA

Research Intern – Intelligent Systems Division **January 2017 – March 2018**

Utilized artificial intelligence background in planning and decision making to develop a POMDP based decision support system for the Resource Prospector Mission lunar rover and a novel mission to Titan.

Stinger Ghaffarian Technologies, Moffett Field, CA

Research Intern at NASA Ames **October 2017 – December 2017**

Government contractor. See above.

rLoop Inc, Menlo Park, CA

Embedded Controls Engineer **August 2016 – November 2016**

Implemented and tested control and signal processing algorithms for hardware development test rigs. Won the Innovation Award in the January 2017 SpaceX Hyperloop competition

OPPO, Menlo Park, CA

Intern **June 2016 – August 2016**

Worked on software and electronic tests, along with electronic prototyping for various devices. Wrote optimization software and automated common tasks.

Stanford, Stanford, CA

Research Intern **January 2016 – March 2017**

Conducted research with Prof. Kochenderfer and the Stanford Intelligent Systems Laboratory on algorithms for multi-agent deep reinforcement learning systems and decision making under uncertainty.

Relevant Experience

Gunn Zero Robotics Team, Gunn High School, CA

Founder and Captain **August 2016 – December 2017**

Founded and led space robotics programming team to the international finals for the Zero Robotics Competition. Code ran on SPHERE satellites on the International Space Station.

Gunn Robotics Team, Gunn High School, CA

Controls Member **August 2015 – August 2017**

Developed robotics controls systems for the FIRST Robotics Competition. Wrote code for vision tracking, autonomous programs, and PID control with Python.

Select Publications

- E. Balaban, T. Arnon, A. Gao, M. Shirley, S. Brisson, M. Kochenderfer, "Realtime Traverse Synthesis for Planetary Rovers Under State and Execution Uncertainty", in *AIAA Space and Astronautics Conference*, Orlando FL, September 2018.
- E. Balaban, T. Arnon, M. Shirley, S. Brisson, and A. Gao, "A System Health Aware POMDP Framework for Planetary Rover Traverse Evaluation and Refinement", in *AIAA Information Systems Conference*, 2018
- E. Balaban, T. Arnon, A. Gao, S. Brisson, and M. Kochenderfer, "System Health Enabled Realtime Planning Advisor (SHERPA)", Manuscript in preparation for *AIAA Journal for Aerospace Information Systems*, 2018
- A. Gao, "Development of a Real-Time Decision Support System", *NASA Office of Education*, 2017