**KEGAN KAWAMURA**

(415) 722-9258 | kgnkwmr@gmail.com | linkedin.com/in/kegan-kawamura-space | 14826 Freeman Ave, Lawndale, CA 90260

**EDUCATION**

**B.S.,** **Electrical Engineering and Computer Science, University of California, Berkeley** **(08/2013 – 12/2017)**

* Awards: High Honors in Electrical Engineering and Computer Sciences, Jim and Donna Gray Scholarship
* Miscellaneous: Study Abroad at University of Osaka (described below), Qualified for a Minor in Mechanical Engineering

**INDUSTRY EXPERIENCE**

*Guidance, Navigation, and Controls Engineer* – **Boeing Satellite Systems (03/2018 – Present)**

* *Simulation Software Administrator*

Designated focal for Boeing’s, in-house, simulation software for satellites (written in C/C++); Actively improve the software architecture and algorithm development process; Manage version control in SVN; Host educational meetings for co-workers unfamiliar with the software capabilities

* *Algorithm Development*

Read and write documents describing algorithms relevant to satellite attitude controls; Developed new algorithms for GPS tracking and data interpretation; Calculate and verify data parameters to be used on-board the satellite software; Extensive use of C/C++ and Microsoft Word (documentation)

* *Design Analysis and Testing*

Run simulations and present data to ensure satellite performances are within the requirement margins; Write chapters in Analysis Books describing gain design and validation (such as Attitude Estimation); Develop simulation scenarios for testing satellite performance in different environments and initial conditions; Extensive use of C/C++ and MATLAB

* *Mission*

Act as the Controls Representative during satellite launch and orbit raising missions

*College Technical Intern*– **SIT&E Unmanned Systems, Northrop Grumman (06/2016 – 08/2016)**

* Support lab operations and maintenance for the UCAS (Unmanned Combat Air Systems) program
* Compile a checklist for cyber security on the Fire Scout, which will ultimately become the basis for requirements
* Develop a computer vision program for picking up a video stream from quadcopters and tracking objects

**RESEARCH AND ACADEMIA**

*Undergraduate Researcher* – **Spacecraft Dynamics and Control, Osaka University (04/2017 – 08/2017)**

* Use optimization software (IPOPT, GPOPS-II) to calculate the optimal trajectory of a spacecraft landing on the moon
* Include “coasting” into the optimal trajectory, and analyze the effects it has on the final trajectory and state
* Present the research on a PowerPoint presentation and answer questions on the research

*Undergraduate Researcher* – **Model Predictive Controls, UC Berkeley (08/2016 – 03/2017)**

* Develop an MPC-based controller for an RC car to follow a path
* Support the networking capabilities of an RC car project within the lab for simulating vehicle controllers
* Learn and implement programs in ROS
* Brief involvement in AI/Machine Learning based projects in autonomous vehicles

*Instrument UI developer*– **Kinoshita Lab, SPring-8/University of Hyogo, Japan (06/2014 – 08/2014)**

* Create a user interface through LabVIEW to control the largest reflectometer in the world
* Write a research article to summarize the process and the necessity of the instrument
* Learn LabVIEW from scratch over the course of the internship using both Japanese and English resources

**SKILLS AND EXPERIENCES**

* *Software Development*
  + Languages: C/C++, Python, MATLAB
  + Version Control: SVN, Git
  + OS: Windows, Unix-like environments
* *Space Systems*
  + Attitude Control Systems: Kalman Filters, Reaction Wheels, Ion and Liquid Propulsion Thrusters, Magnetic Torque Rods, Solar Radiation Pressure
  + Orbital Mechanics: Kepler Parameters, GEO, MEO
  + Navigation: GPS
* *Miscellaneous*
  + Fluent in Japanese, Pilot-in-training, Film buff, Amateur DJ, Former Triathlete