# CHARLSON SO

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## Work Experiences

**Raytheon Intelligence and Space**                    **Raytheon Technologies**
**Senior Software Engineer**                              **March 2024 - Current**
**Software Engineer II**                                  **Jun 2020 – March 2024**
**Software Engineering Intern**                           **Jun 2019 – Aug 2019**

- Improved boot up process of secure hardware by 50%. Developing and fixing drivers for improved bootloader performance. Software development done on Xilinx based hardware.
- Analyzed spurious signals for digital signal processing. Improved frequency detection of real time system.
- Developing data collection software and real time engineering displays capable of interfacing with RDMA high speed networking protocol at 5 GB/s. Software stack includes Boost/Beast, Protobuf and Websockets. Written in C++14 and Javascript.
- Added features and software updates to tactical code base written in C on flight hardware. Developed on Vxworks 7 and ARM based processing boards.
- Developed cross platform software simulations to emulate flight dynamics, digital and signal processing algorithms, and radar scans in C/C++
- Implemented graphical interfaces used for radar testing and development in Visual C and OpenGL

**Control Architecture for Swarm of Robotic Boats**      **NASA – Jet Propulsion Laboratory**
**Software Engineering Intern**                          **Feb 2018 – Jun 2019**

- Ran technical analysis on software performance, integrated autonomy modules, and developed an automated testing framework in Python
- Led the initiative for an automated reporting pipeline for analysis of robotic behaviors
- Architected and deployed database management tools used to develop a camera system for horizon contact detection. Features include generating datasets for supervised training and automated labeling

## Technical Skills

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| **Languages:** | C++, Python, C, Matlab |
| **Frameworks and Libraries:** | Boost (ASIO, thread), Qt, OpenGL, Numpy, Matplotlib, Xilinix SDK, |
| **Tools:** | Tmux, Github, Atlassian Suite (Jira, Confluence, GitLab) |
| **OS:** | Ubuntu, Centos, Redhat, Windows, OSX, Vxworks 7 |

## Education

**California State Polytechnic University, Pomona**      **Aug 2018 – Jun 2020**
M.S. Computer Science                                    GPA: 3.70

**Glendale Community College**                           **Aug 2015 – Jun 2018**
A.S., Physics
A.S., Mathematics

**University of California, Berkeley**                   **Aug 2009 – Jun 2013**
B.A., Public Health