# SEAN KHOMPHENGCHAN

Active Secret Clearance 574-327-9116 Seankhom@gmail.com

## **OBJECTIVE**

I am a recent graduate looking for positions in the space sector that match my interest in GNC, Software, or Robotics.

# **EDUCATION**

Purdue University, West Lafayette, IN

Bachelor of Science in Aeronautical & Astronautical Engineering Specializations: Dynamics and Control

Relevant Coursework: Spacecraft Attitudes, Multi Agent Autonomy, Applied Controls in Astronautics, Satellite Navigation Technical Skills: MATLAB, Python, Simulink, Rust, C++, Tcl/Tk, Git, Linux, STK, Agile Development, Controller Design

# **TECHNICAL & RELEVANT EXPERIENCE**

# **Associate Software Engineer**

Airbus US Space and Defense, Arlington VA

- Develop and test spacecraft flight software using C++ and Tcl/Tk while in a Linux subsystem.
- Use Simulink and Rust to build 6-DOF GNC models for mission analysis and to test interfacing with hardware.
- Verify developed simulation tools by using tools such as STK and MATLAB to compare results.
- Serve a matrixed role to the GNC and Flight Software teams to ensure work is cross compatible to one another.

#### **Modeling and Simulation Intern**

Raytheon, Arlington VA

- Developed algorithms to predict and simulate platform performance and to conduct threat assessments.
- Briefed executives all the way to the president of the company on work accomplished and impact of.
- Directly contributed to a F-35 engine study that led to the winning of a \$5.2-billion contract for an engine upgrade.
- Utilized Object Oriented Python and Java to build campaign level simulation software.
- Used Monte-Carlo Simulations to analyze effectiveness of different strategies and platforms.

#### **Undergraduate Teaching Assistant**

- Purdue University, West Lafayette IN
- Provided guidance to over 100 students on MATLAB, Python, and Excel to refine course concepts.
- Piloted a successful computer lab for students to access help for bridge programming and engineering skills. ٠
- Assisted in the design of coursework and curriculum for First Year Engineering. •

## **PROJECTS**

## Senior Spacecraft Design Project

- Design a mission using reflected GNSS signals to find ocean surface wind speed of all bodies of water.
  - Size TT&C and Control system budgets along with choosing specific actuators for spacecraft.
- Simulate varying number of satellites in mission analysis software under a variety of different effects. .
- Use MATLAB and Python to do stability analysis and do budget calculations.

#### **Multi Agent Simulation for Competitive Esports**

- Built a program to simulate 5-unit vs 5-unit battles modeling a match within a Tactical Shooter Game.
- Created using Python and JavaScript utilizing the Mesa library.
- Able to verify accuracy by comparing against real life match data.
- Each agent programmed with game objectives based on a hierarchical rule set.

## **Convex Six-DOF Spacecraft Model**

- Incorporated Kalman Filters into control system design of active controlled model rocket.
- Create and model motion of spacecraft using sensor data with MATLAB and Simulink. •
- Convexified trajectory and attitude of spacecraft using CVX library for reorientation.

April 2023 – May 2023

January 2022 - May 2023

June 2022 - August 2023

GPA: 3.21 / 4.00

December 2023

January 2024 - Present

August 2021 - May 2023

August 2023 - December 2023