# BONSUCK KOO

bonsuckkoo@gmail.com • (347) 798-5104• LinkedIn

LinkedIn:

## EDUCATION

**Integrated Masters and Bachelor of Science in Mechanical Engineering** Graduation: 12/2024
*The University of Texas at Austin* *GPA: 3.92/4.00*
Relevant Coursework: Aerial Robotics, Spacecraft Dynamics, Automated Control Systems Lab, Stochastic estimation and control

## WORK EXPERIENCE

**Navigation and Guidance Control Graduate Intern,** *Sandia National Laboratories* *05/2024-Present*
- Improve MATLAB and Simulink models of a flight vehicle to enhance its overall accuracy and reduce SWIL development time
- Automate 6-DOF simulations and introduced error logging feature through PowerShell and Task Scheduler to save 30 mins for SWIL engineers
- Presented my project to the department engineers to promote its application to other projects, receiving positive feedback from the audience

**Guidance Navigation and Control Intern**, *Blue Origin* *09/2023-12/2023*
- Implemented a new navigation related feature to a rocket simulation in MATLAB and Simulink, improving its overall fidelity
- Collaborated with other GNC engineers to enhance navigation simulation in Simulink and MATLAB through GIT and regular meetings
- Documented my work on Confluence to explain changes to code and common errors that appear, enhancing transferability of work to other engineers

***CMP Engineering Intern,*** *Samsung Semiconductors* *05/2022 – 08/2022*
- Debugged a production failure tracking tool using VBA, saving 1 hour for the technicians every shift
- Created a website version of the production failure tracking tool using JavaScript, CSS, and HTML to improve accessibility and reduce errors made by technicians

**Systems Engineering Team, Co-op,** *Trane Technologies* *05/2021 – 01/2022*
- Validated performance of mechanical fittings that can reduce residential installation time by 25%, and collaborated with technicians to define verification requirements
- Analyzed products against new federal standard using Alteryx and Tableau, contributing to potential savings of $ 400,000

## PROJECT

**Drone Project Team Member**, *Aerial Robotics* *01/2024 – 05/2024*
- Developed C++ algorithm for a drone to find the optimal path through obstacles, finishing the race in 2nd place
- Created a 6-DOF simulation and used the Unscented Kalman filter in MATLAB to test attitude and position controllers' performance with understanding of dynamics and GNSS and IMU measurements
- Led the team to use GIT to easily divide and share tasks, enhancing teamwork and time management

**Suspension Team Lead**, *Guadaloop (Hyperloop Team)* *01/2023 – 08/2023*
- Managed a suspension project to produce a design in 6 months with its analysis on stress and cost
- Conducted FEA of suspension mount and shaft to withstand dynamic and static force during vehicle operation

**Team Leader**, *Senior Capstone Design Project* **(***Southwest Research Institute)* *08/2022 – 12/2022*
- Produced a preliminary hammer design for the Medium Weight Shock Machine to produce the least amount of stress on the hammer pivot upon impact and comply with MIL-DTL-901E
- Organized weekly meetings with sponsors, teaching staff and advisors to discuss technical issues and communicate the team's progress

## SKILLS

Technical: Simulink, MATLAB, Git, C++, Python, PowerShell, Task Scheduler, Alteryx, Tableau, JavaScript, HTML CSS, SolidWorks, VBA
Languages: Korean (Fluent)