**Bonsuck Koo**

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**EDUCATION**

**The University of Texas at Austin GPA: 3.92/4.00**

*Integrated Masters and Bachelor of Science in Mechanical Engineering Dec 2024*

Relevant Coursework: Aerial Robotics, Spacecraft Dynamics, Automated Control Systems Lab, Stochastic estimation and control

**WORK EXPERIENCE**

**Sandia National Laboratories,** *Navigation and Guidance Control Graduate Intern 05/2024-Present*

* Improved low-side MATLAB and Simulink models of flight vehicles to reduce SWIL development time
* Automated 6-DOF simulations through PowerShell and Task Scheduler to save 30 mins for SWIL engineers

**Aerial Robotics,** *Drone Project 01/2024 – 05/2024*

* Developed C++ algorithm for a drone to find a path through obstacles, finishing a race in 2nd place
* Modeled UAV dynamics, sensor measurements, and developed attitude and position controller in MATLAB
* Led the team to use GIT to easily divide and share tasks, enhancing teamwork and time management

**Blue Origin,** *Guidance Navigation and Control Intern* *09/2023-12/2023*

* Implemented a new 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 by using GIT and documenting my work on Confluence

**Samsung Semiconductors,** *CMP, Engineering Intern 05/2022 – 08/2022*

* Debugged production failure tracking tool using VBA, saving 1 hour for the technicians every shift
* Created a website version of the technical documents using JavaScript, CSS, and HTML

**Trane Technologies,** *Systems Engineering Team, Co-op 05/2021 – 01/2022*

* Analyzed products against new federal standard using Alteryx and Tableau, contributing to potential savings of $ 400,000
* Validated performance of mechanical fittings that can reduce residential installation time by 25%, and collaborated with technicians to define verification requirements
* Developed a Tableau tool that analyzes product margins, sales, and performance to understand customer demands and simplify company’s product portfolio

**LEADERSHIP**

**Gudaloop,** *Suspension Lead* *01/2023 – 08/2023*

* Managed a suspension design project to deliver a design on time with adequate documentation on stress and cost analysis
* Conducted FEA of suspension mount and shaft to withstand dynamic and static force during vehicle operation

**Senior Capstone Design Project,** *Southwest Research Institute, Team Leader*  *08/2022 – 12/2022*

* Optimized the hammer design to produce zero stress on the hammer pivot upon impact
* Designed a CAD model of Medium Weight Shock Machine that comply with MIL-DTL-901E
* Organized weekly meetings with sponsors, teaching staff and advisors

**Republic of Korea Army,** *Radiotelephone Operator, Counselor**12/2018 – 08/2020*

* Received top marks for promotion tests every quarter by directing 7 squad members in tactical courses using leadership and promoting teamwork
* Received a merit award for effectively relaying orders and situations directly to and from officers in the field

**SKILLS**

Simulink, MATLAB, Git, Python, C++, PowerShell