

EDUCATION

| | |
|---|-----------------|
| Graduate Research in Aeronautics & Astronautics , University of Washington | <i>Dec 2024</i> |
| No degree, passed Ph.D. qualifying exam | |
| Relevant Coursework: Aeroelasticity AI-Based Mobile Robotics Convex Optimization Nonlinear Controls Space System Dynamics & Controls | |
| M.S. in Mechanical Engineering , Pennsylvania State University | <i>May 2018</i> |
| Relevant Coursework: Fluid Mechanics Linear Systems Theory Mechatronics Vehicle Dynamics | |
| B.S. in Mechanical Engineering , University of South Florida | <i>Aug 2016</i> |
| Minor in Physics | |
| Minor in Spanish | |
| Relevant Coursework: Kinematics & Dynamics Machine Design Physics Thermal Systems Vibrations | |

WORK EXPERIENCE

| | |
|--|------------------------------|
| Engineering Consultant , SDI Engineering Inc. | <i>Nov 2023 – Present</i> |
| <ul style="list-style-type: none">Developing high fidelity aircraft landing gear models in Matlab and Simulink.Maintaining and improve existing proprietary simulation software to meet modern standards.Writing technical reports on landing gear software development.Implementing PID control for aircraft simulations. | |
| Graduate Research Assistant , University of Washington | <i>Sept 2020 – Present</i> |
| <ul style="list-style-type: none">Researching nonlinear dynamics and controls of bio-inspired vehicles for environmental sensing.Researching nonlinear observability and estimation of rigid-bodies.Implementing Kalman filtering for state estimation and control of various robotics systems.Applying signal processing and filtering methods to IMU data. | |
| Data Science Training Program Intern , Pacific Northwest National Laboratory | <i>June 2022 – Sept 2022</i> |
| <ul style="list-style-type: none">Utilized Pandas, JSON and SQL-like databases to extract, transform, and load data efficiently for analysis.Conducted exploratory data analysis with Pandas to uncover trends and patterns in datasets.Collaborated with cross-functional teams to define requirements and document work flows to support decision-making. | |
| Optical Engineer II , North American Lighting Inc. | <i>June 2018 – Sept 2020</i> |
| <ul style="list-style-type: none">Identified process improvement opportunities and gathered team feedback to optimize tools and workflows.Developed and implemented automation solutions using VBA and C++ for Excel, PowerPoint, CATIA V5, and LucidShape.Designed and modeled lighting surfaces to meet customer specifications and regulatory standards.Evaluated automotive lightning designs through photometric lab testing and data analyses to meet automotive regulations.Established internal documentation and code development standards, adopted by management.Led training sessions on lab procedures and design standards, facilitating the rapid integration of new team members. | |
| Graduate Research Assistant , Pennsylvania State University | <i>Aug 2016 – May 2018</i> |
| <ul style="list-style-type: none">Researched fuel-consumption minimization techniques using optimal control, contributing to ARPA-E NEXTCAR.Developed a Python-based web scraper for gathering data on engineering education trends.Provided insights into graduate student attrition through several ASEE conference papers and a JEE journal article.Mentored students in qualitative research methods, culminating in the publication of conference papers.Assisted in teaching thermodynamics as a course TA. | |

SKILLS

| |
|--|
| <ul style="list-style-type: none">Design Technologies: ANSYS CATIA Simulink SolidWorksProgramming Languages: C++ MATLAB Python ROSDeveloper Technologies: CSS Express Git HTML JavaScript MongoDB Node.js Visual Studio VSCodeAdditional Technologies: Illustrator LaTeX Photoshop SQL VBALanguages: Spanish (intermediate) |
|--|

AWARDS AND CERTIFICATIONS

| |
|--|
| <ul style="list-style-type: none">CATIA V5 SurfacingCITI Export ComplianceUdemy Web Development Bootcamp Course Completion |
|--|

PUBLICATIONS

| |
|--|
| <ul style="list-style-type: none">E. Sundquist, C. Whitehair, and K. A. Morgansen, <i>Nonlinear Multi-Sensor Observability and Estimation of Rigid Body Inertial Parameters</i>, AIAA SCITECH Forum, 2024C. G. P. Berdanier, C. Whitehair, A. Kirn, D. Satterfield, <i>Analysis of social media forums to elicit narratives of graduate engineering student attrition</i>, J Eng Educ, 2020C. Whitehair, M. A. K. Denlinger, H. K. Fathy, <i>Pulse-and-glide driving with driveability constraints: A pontryagin approach</i>, AVEC, 2018C. Whitehair, C. G. P. Berdanier, <i>Capturing narratives of graduate engineering attrition through online forum mining</i>, ASEE Annual Conference and Exposition, 2018 |
|--|