

# Dalan Christopher Loudermilk

## Education

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- ▶ **Ph.D., Aerospace Engineering, In Progress**  
*University of Maryland College Park*
- ▶ **M.S., Aerospace Engineering, December 2024**  
*University of Maryland College Park*
- ▶ **B.S.E., Concentration in Mechatronics, May 2020**  
*With Distinction*  
*Jointly Issued by North Carolina State University*  
*and University of North Carolina Asheville; Asheville, NC*
- ▶ **B.A., Mathematics, Concentration in Applied Mathematics, May 2020**  
*With Distinction*  
*University of North Carolina Asheville; Asheville, NC*

## Employment

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- ▶ **National Aeronautics and Space Administration - Langley Research Center**  
**Autonomous Integrated Systems Research Branch**  
Student Trainee (Engineering), Pathways Program, June 2022 – Present
- ▶ **University of Maryland College Park**  
**Department of Aerospace Engineering**  
Teaching Assistant, August 2024 – Present
- ▶ **University of Maryland College Park**  
**Motion and Teaming Laboratory**  
Graduate Research Assistant, August 2020 – June 2022
- ▶ **University of North Carolina Asheville**  
Teaching Assistant, August 2017 – December 2019  
Undergraduate Research Assistant, May 2019 – August 2019

## Published Research

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### Conference Publications

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- ▶ *Assembly Sequence Optimization for Space Structures*  
Dalan C. Loudermilk | Dr. John R. Cooper | Dr. Michael Otte
- AIAA ASCEND*  
*2024*

## Unpublished Research

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### Graduate Research

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- ▶ *Autonomous Structural Assembly Sequencing* June 2022 - Present  
Dr. Michael Otte, UMD - College Park | Dr. John Cooper, NASA Langley
- ▶ *Adaptive Step Size for Path Planning Using RRT\* and MPC* June 2022 - December 2022  
Dr. John Cooper, NASA Langley
- ▶ *Multi-Agent Structural Assembly with Guaranteed Redundancy (and Quick Re-Planning) White Paper* August 2021 - May 2022  
Dr. Michael Otte, UMD - College Park | Dr. William Doggett, NASA Langley | Funded by National Institute of Aerospace
- ▶ *Analysis of the Effects of Hacking on Algorithmic Behavior of Kilobot Swarms* August 2020 - May 2021  
UMD - College Park | Dr. Michael Otte | Funded by Northrop Grummond

### Undergraduate Research

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- ▶ *Experimental Validation of Control and Tracking Algorithms for Landing a Drone on a Moving Platform* August 2019 - March 2020  
Dr. Mahmut Reyhanoglu, UNC-Asheville
- ▶ *Experimental Validation of a Photovoltaic Crawler Prototype* May 2019 - December 2019  
Dr. Mahmut Reyhanoglu, UNC-Asheville
- ▶ *Application of Phase Change Materials to Increase Efficiency of Body Heat Harvesting with Thermoelectric Generators* May 2018 - August 2018  
Dr. Daryoosh Vashaee, ASSIST REU NCSU

## Projects

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### Undergraduate Projects

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- ▶ *2020 NASA Lunabotics Robotic Mining Competition* January 2019 - May 2020  
Team Lead
- ▶ *2018 IEEE SoutheastCon Hardware Competition* January 2018 - May 2018  
Team Member

## Presentations

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### Presentations (Invited)

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- ▶ *Space Mission Challenges for Information Technology / Space Computing Conference (SMC-IT/SCC) 2023* July 2023  
Trustworthiness of a Surrogate Model for Assembly Sequencing of Space Structures
- ▶ *Mathematical Association of America NC State Dinner* September 2019

## Workshops

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- ▶ SmallSat Mission Design School *July 2022*  
Cornell University
- ▶ TABIP Summer Science Academy (Aerospace Engineering) *July 2019*  
Yunus Emre Institute
- ▶ Clearpath Robotics ROS Workshop *May 2019*  
Clemson Edisto Research & Education Center

## Grants, Fellowships, & Awards

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### Fellowships

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- ▶ NSF Nanosystems Engineering Research Center for Advance Self-Powered Systems of Integrated Sensors and Technologies (ASSIST) *Summer 2018*  
Research Experience for Undergraduates (REU) at NCSU

### Grants

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- ▶ UNCA Undergraduate Research Grant *Summer 2019*

### Awards

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- ▶ Mechatronics Outstanding Professionalism Award *May 2020*
- ▶ Jane Oliver Swafford Mathematics Scholarship *2019-2020*
- ▶ SCUDEM Modeling Challenge (Meritorious Achievement) *Fall 2019*