TRAVIS DRIVER

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EDUCATION

Georgia Institute of Technology 2019 - Present
Doctor of Philosophy, Robotics *GPA: 4.00/4*
Advisor: Professor Panagiotis Tsiotras

The University of Texas at Austin 2015 - 2019
Bachelor of Science, Computational Engineering, High Honors *GPA: 3.93/4*

RESEARCH EXPERIENCE

Dynamics and Control Systems Lab (DCSL) August 2019 - Present
Graduate Research Assistant *Atlanta, GA*

· Conducting research in computer vision, 3D perception, and navigation for proximity operations in space.

Autonomous GNC Lab September 2018 - May 2019
Undergraduate Research Assistant *Austin, TX*

· Designed and implemented computer vision algorithms for autonomous navigation of robotic rover platform
· Implemented feature-based detection and tracking algorithms to resolve relative pose of target object
· Demonstrated successful autonomous rendezvous operation of robotic platform with target object

Texas Spacecraft Lab June 2017 - January 2018
Algorithms Team Lead (Sept. 2017 - Jan. 2018), Systems Engineer (June 2017 - Sept. 2017) *Austin, TX*

· Led team of 5+ engineers to implement machine learning and computer vision algorithms to detect target spacecraft
· Created a Python-based GUI to track and display spacecraft electrical power systems data
· Conducted workshops to teach 20+ new members core concepts in Python and Git

Institute for Computational Engineering and Sciences May 2017 - August 2017
Undergraduate Research Assistant *Austin, TX*

· Implemented and evaluated novel clustering methods for an optimization and integration software library
· Constructed programs to evaluate an advanced uncertainty quantification software library (QUESO) in C++
· Improved variable assignment and subroutine methods to increase script efficiency of test programs

INDUSTRY EXPERIENCE

Sandia National Laboratories June 2019 - August 2019
Software R&D Intern *Albuquerque, NM*

· Implemented visual-SLAM algorithms for GPS-denied autonomous drone navigation
· Trained and optimized convolutional neural networks to efficiently identify objects in X-ray images

Northrop Grumman January 2018 - August 2018
Guidance, Navigation & Control Engineer Intern *Wallops Island, VA*

· Implemented novel Inertial Navigation System (INS) calibration methods improving performance by $\sim 43\%$
· Designed a software interface to configure the on-board Flash memory of the Attitude Control System
· Created an automated testing module to collect data and analyze the performance of the developmental INS
· Conducted post-flight analysis of the reported angular rates and attitude of the INS to evaluate performance

TEACHING EXPERIENCE

COE 301: Introduction to Computer Programming August 2017 - December 2017
Teaching Assistant, The University of Texas at Austin *Austin, TX*

- Aided in teaching core programming concepts in MATLAB, C++, and Fortran to a class of 100+ engineering students
- Taught students course material one-on-one through 2 one-hour sessions of office hours per week
- Assisted in creating course material and homework assignments focused on key programming concepts

PUBLICATIONS

1. **T. Driver**, M. Dor, K. Skinner, and P. Tsiotras, "Space Carving in Space: A Visual-SLAM Approach to 3D Shape Reconstruction of a Small Celestial Body," *AAS/AIAA Astrodynamics Specialist Conference*, Lake Tahoe, CA, USA, August 2020

HONORS & AWARDS

President's Fellowship, *Georgia Institute of Technology* (2019 - Present)

University Honors, *The University of Texas at Austin* (2015 - 2019)

SKILLS

Programming: C++, C, C#, Python, MATLAB, Fortran, Bash, Java
Software: GTSAM, ROS, OpenCV, Blender, TensorFlow, SolidWorks
Certifications: Technician Class Operator Radio License, NASA GSFC Electrostatic Discharge Operator