

# STEVEN D. MORAD

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## INTERESTS

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Field Robotics, Computer Vision, Reinforcement Learning, Dynamics and Mobility

## EDUCATION

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**University of Arizona** Aug 2017 - Sep 2019  
*Master of Science (Thesis) in Aerospace Engineering* GPA: 3.78/4.00

Research assistant in the Space and Terrestrial Robotic Exploration Lab  
Mobility, autonomy, and vision for extreme environment and off-world exploration

**University of California, Santa Cruz** Sep 2011 - June 2015  
*Bachelor of Science in Honors Computer Science* GPA: 3.60/4.00  
Engineering Honors, Cum Laude

## WORK EXPERIENCE

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**Cambridge Research Laboratory (Toshiba)** Jan 2020 - Jul 2020  
*PhD Research Intern - Computer Vision Group*

- Collision-free visual navigation to semantically-specified targets using deep reinforcement learning
- General navigation policies that transfer from ground robots to quadrotors without any retraining
- Real-world effectiveness on aerial and ground robots in cluttered home and office environments
- Near-field photometric and multiview 3D reconstruction

**NASA Jet Propulsion Laboratory** May - Aug, 2018 and 2019  
*Graduate Robotics Intern*

- Visual-inertial odometry for an ice-climbing robot in visually-degraded glacial environments
- Develop robot dynamics, perception, and motion planning in ROS
- Procedural mesh generation of glacial caves penitente fields

**Facebook** Oct 2015 - Aug 2017  
*Software/Systems (Production) Engineer I/II*

- Engineer infrastructure for Facebook's large distributed execution engine
- Python and PHP/Hack software development
- Toolchain and OS development for BSD and Linux

## TOOLS

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Linux, Networking, ROS, Gazebo, PCL, OpenCV, PyTorch, OMPL, C++, Python, Bash, MATLAB, Microcontrollers, Breadboard Prototyping, Soldering, SolidWorks (CAD), 2D/3D LiDAR, Pyrotechnics

## SELECTED PUBLICATIONS

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**Morad, S.D.**, Mecca, R., Poudel, R., Liwicki, S., Cipolla, R. (2020 June). *Embodied Visual Navigation with Automatic Curriculum Learning in Real Environments*. Submitted to NeurIPS

**Morad, S.D.**, Nash, J., Higa, S., Smith, R., Parness, A., and Barnard, K. (2019 August). *Improving Visual Feature Extraction in Glacial Environments*. Dual publication in IEEE Robotics and Automation Letters and The International Conference on Robotics and Automation.

