TED KERN

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science, Electrical and Computer Engineering — Expected Dec '18
- GPA: 4.00/4.00

Bachelor of Science, Electrical and Computer Engineering
- GPA: 3.17/4.00

EXPERIENCE

347C Extreme Environment Robotics, NASA Jet Propulsion Laboratory — Pasadena, CA
JPL Summer Internship Program, ISEE Perception Intern — Jun - Aug '18
- Researched composition and visible characteristics of planetary ice, discovering methods to replicate natural processes
- Crafted C++ test suite for evaluating different mapping methods on ice walls using PCL

JPL Summer Internship Program, LEMUR Perception and Navigation Intern — May - Aug '17
- Refactored and standardized Catkin C++/Python codebase and build tooling of robot control, perception, and planning software
- Investigated cause of artifacts in 3D terrain scans and implemented filtering to reduce falsely detected surfaces

JPL Summer Internship Program, LEMUR Perception and Navigation Intern — May - Aug '16
- Simulated sensor configurations and filters to optimize design and placement of surface approach sensors on rock climbing robot limbs
- Implemented C++ interface for Realsense R200 on Linux for ROS

Pololu Robotics and Electronics — Las Vegas, NV
Electrical Engineering Intern — Jun - Aug '14
- Designed and brought to market consumer motor driver shield in Altium
- Documented product and created Arduino library for product info page

RESEARCH EXPERIENCE

Biorobotics Lab, Carnegie Mellon University — Pittsburgh, PA
Undergraduate Research Assistant, Modsnake — Aug '14 - Aug '16
- Planned, specced, and routed a densely packed control, sensor and power board to attach to a high powered brushless DC motor
- Migrated several ongoing lab projects from Redmine to Github
- Managed lab infrastructure including project repos, wikis, and servers
- Oriented and trained new electrical and software researchers

Planetary Robotics Lab, Carnegie Mellon University — Pittsburgh, PA
Undergraduate Researcher, Andy Rover — Aug '14 - Jun '15
- Developed space-grade power conversion and distribution board
- Conducted feasibility review on camera configurations for rover mast
- Investigated compatibility of a more rugged FPGA based image processing approach versus fragile GPU kit in computation subsystem

SKILLS

Software: ROS, Unix, CMake, OpenCV, OpenGL, Qt, Altium, Solidworks, Simulink, Photoshop
Hardware: PCB assembly, Circuit Debugging, 3D Printing, Laser Cutting, Basic Machining
Programming Languages: C, C++, C#, MATLAB, Python, Java, Javascript
Spoken Languages: English (Native), Portuguese (Fluent), French (Conversational)

SELECTED PROJECTS

SLAM Scan: Mixed Reality, *ECE Capstone, Team Project* — Spring '18
- Fused depth camera with a VR beacon to perform realtime 3D scans
- Adapted teammate's OpenGL visualizer to render in VR using OpenVR

Biogenicity Classifier, *Pattern Recognition Theory (Graduate)* — Fall '17
- Performed analysis on a set of images from cave expedition in MATLAB
- Discovered underlying discriminant for biological origins

ADDITIONAL EXPERIENCE

School of Computer Science, Carnegie Mellon University — Pittsburgh, PA
Teaching Assistant, 15-294/15-394 Rapid Prototyping Technologies — Aug '18 - Present
Teaching Assistant, 15-122 Principles of Imperative Computation — Aug '15 - Dec '15