

Patrick Clifton Gray

pgrayobx@gmail.com

Cell: 252-256-2183

Permanent Address

P.O. Box 425

Kitty Hawk, NC 27949

Education: University of North Carolina at Chapel Hill, May 2014
Major in Computer Science

Honors:

- Morehead-Cain Scholar - full merit scholarship to UNC Chapel Hill including four fully funded summer programs
- Semester in the Honors Program Exchange at the National University of Singapore (Spring 2013)
- 2015 SEDS-USA Executive Director's Award for Top Staff Member
- 2012 North Carolina Space Grant Undergraduate Research Scholar
- 2010 MATE ROV Robotics Competition International Champion

Work Experience:

- Harvard University, Girguis Lab, Research Technician**, Cambridge, MA, USA 2017, Feb – Present
- develop, automate, and support instrumentation for the Girguis Lab's deep sea exploration

WayPaver Foundation, Chief Technical Officer, Chattanooga, TN, USA 2015, Aug. – 2017, Feb

 - assist CEO in senior leadership and oversight of programs
 - lead development of WayPaver's Lunar Settlement Index and technical programs and related outreach
 - manage partnerships with government officials, startups, and researchers supporting lunar settlement

NC Governor's School, Teaching Assistant / Residential Advisor, Winston Salem, NC, USA 2015, May - 2015, July

 - taught and assisted the Natural Science course track at NC publicly-funded gifted summer program
 - managed a hall of 30 students, ensuring medical, emotional, and mental well-being

Moon Express, Software Engineer, Mountain View, CA, USA 2014, June - 2015, May

 - developed the MoonEx Ground Data Systems to support the MX-1 Lander and related testing
 - supported the Software/Avionics teams via internal tools, web apps, build systems, sys admin, and embedded systems
 - assisted in mission operations and launch operations for test campaigns at Kennedy Space Center

UNC IT Dept., Residential Computing Consultant, Chapel Hill, NC, USA 2011 Aug. - 2012 Dec.

 - responsible for over 300 residents and their technical well-being

Sample of Technical/Research Projects:

- **Data Pipeline and Tool Suite (Moon Express)** – helped to lead development of the Ground Data System and tools such as telemetry visualization, mission ops e-procs, remote monitoring (Python, C, ZeroMQ, Matlab, MongoDB, Flask, Javascript)
- **Lunar Imaging Subsystem (Moon Express)** – developed motor/camera firmware and drivers, data pipeline, and an integrated mission operations and test system to successfully demo a lunar imaging system (C, Beaglebone, GoPro, ITOS, STOL, Procs, Linux)
- **3D Depth Perception (Alterovitz Robotics Lab, lead)** – integrated a Microsoft Kinect with a Linux system running ROS to give a small humanoid robot 3D vision for collision detection (C++, Linux, PointCloud API, OpenNI)
- **High Altitude Weather Balloon Platform (NC Space Grant, Research Scholar)** – managed and led 3 launches of weather balloons for equipment testing and data collection. (Arduino, C++, sensor design, telemetry)

Leadership and Volunteer Activities:

- Advisory Council Member**, WayPaver Foundation 2017, Feb - Present
- advise WayPaver on strategic direction, technical programs, and support ongoing operations

Board Member, James L. Jenkins Memorial Scholarship 2014, May - Present

 - manage funds for the Sigma Phi Society, the Alpha of North Carolina's main scholarship program

Alumni Association Coordinator, SEDS-USA 2013, Oct - 2016, Dec

 - develop and lead the SEDS-USA Alumni Association from scratch to support the national mission

Founder and President, UNC Students for the Exp. and Dev. of Space (UNC SEDS) 2011, Jan - 2013, May

 - started and led the chapter to over 40 members running numerous nationally known events and projects

Other Experience:

- Programming Languages (in order of experience): Python, Javascript, Bash, C, Java, C++, Assembly, STOL
- Specific Tech Experience: Linux, ROS, Arduino, Beaglebone Black, Raspberry Pi, GoPro, Microsoft Kinect, MongoDB, OpenNI, Flask, ZeroMQ, Amazon Web Services, Google Cloud Engine, D3.js, ITOS
- Languages: intermediate Spanish; basic Portuguese, elementary Mandarin
- Certifications: Wilderness First Responder (2016); USHPA Hang 2 Cert (2016), Hamilton County Special Tactics and Rescue Services, Crew Member (2017)
- Expeditions: Mars Desert Research Station (GreenHab Officer, 2017); Month long Sierra Nevada mountaineering expedition (member, 2010)