Daniel F. McGann

danmcgann.com | github.com/DanMcGann | linkedin.com/in/danielfmcgann

EDUCATION

NORTHEASTERN UNIVERSITY | Boston MA — May 2020

Bachelor of Science in Computer Science with Minor in Computer Engineering - GPA: 4.0/4.0
Awards: Northeastern University Honor Program, Dean's List (All Semesters), Michael B. Silevitch Exemplary Engineering Leadership Award (2018), Robert J. Shillman Award for Engineering Excellence (2019)
Relevant Course Work: Software Development, Computer Systems, Artificial Intelligence, Object Oriented Design, Networks and Distributed Systems, Digital Design and Computer Organization, Algorithms and Data

WORK EXPERIENCE

SQUARE ROBOT | Boston MA — Jan - Aug 2019

Robotics Software Engineering Co-op

- Developed software features and components ranging the entire software stack for a ROS based harsh environment autonomous submersible vehicle
- Designed new vehicle specific techniques for environment exploration with sparse sensor data, and implemented techniques for use with the vehicle's navigation software
- Tested new and existing software features using both unit (gtest) and simulation tests (gazebo/rostest)
- Operated vehicle for field testing of new hardware and software components
- Praised by supervisor as a "problem solver, able to overcome most challenges through hard work and level-headedness"

NORTHEASTERN UNIVERSITY | Boston MA — Sept 2017 - Dec 2018

Tutor for the Khoury College of Computer Science

- Supported students in Northeastern's Fundamentals of Computer Science course
- Assisted with the teaching of labs, held office hours, and graded student assignments

MIT LINCOLN LABORATORY | Lexington MA — Jan - June 2018

Software Engineering Co-op

- Designed a software framework using NASA's Core Flight System to enable autonomous operation of constellations of cube satellites
- Planned and organized project sub-goals and time line from research to code release
- Implemented and tested the framework in C for use on flight realistic hardware and created software for desktop satellite hardware simulators
- Collaborated MIT PhD candidates who used the framework to further research
- Presented results of project to department of 20 and published software as opensource (see github)

SKILLS

PROGRAMMING LANGUAGES
Java • C++ • C • Python
Racket • LaTeX

COMPUTER SYSTEMS
Linux • Windows

PROGRAMS
R.O.S. • Core Flight System
SolidWorks

RESEARCH

NU ROBOTICS AND INTELLIGENT VEHICLES RESEARCH LAB | Boston MA — Sept 2017 - June 2019

NASA RASC-AL's Mars Ice Challenge

- Led interdisciplinary team of six students who designed, constructed, and tested a remotely controlled robotic system capable of collecting water from ice deposits located under simulated Martian regolith
- Programmed system software using the Robot Operating System in both C++ and Python
- Awarded first place overall out of 50 initial teams, collecting 3 times as much water as the runner up (2018) and awarded Best Technical Paper (2019)
- Published results from 2018 Mars Ice Challenge in the proceedings of the 2019 IEEE Aerospace Conference
- E. Danthinne et al., "Design and Experimental Validation of a Martian Water Extraction System," 2019 IEEE Aerospace Conference, Big Sky, MT, USA, 2019, pp. 1-10. doi: 10.1109/AERO.2019.8741579

LEADERSHIP EXPERIENCE

NORTHEASTERN UNIVERSITY SEDS CHAPTER | Boston MA — July 2018 - Present

- Founded Northeastern University's chapter of the Students for the Exploration and Development of Space
- Organized and advised over 200 students, of whom over 100 are involved in one of the club's 7 active technical research projects