Richard Moyer

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Education

- **Massachusetts Institute of Technology** — Cambridge, MA
  Bachelor of Science - Mechanical Engineering — *Sep 2015 - Jun 2019*
  Courses: *Thermo-Fluids, Control Systems, Real Time Operating Systems, Design and Manufacturing*

Skills Summary

- **Mechanical Design**: Mechanisms, Manufacturing Equipment, User Interfaces, Power Electronics, PLC control
- **Materials & Methods**: Injection Molding, CNC Machining, MIM, EDM, Wire Forming
- **Primary Software**: Solidworks
- **Secondary Software**: Python, C/C++, R, Shell Scripting, Ladder Logic, Matlab
- **Soft Skills**: Team and Operations Management, Crew Management

Experience

- **Lexington Medical** — Bedford, MA
  Senior Mechanical Engineer — *Sep 2020 - Present*
  - **Product Design**: Designed new generation of medical device in a 3 person team, responsible for outer shell of device & multiple internal mechanisms from concept through launch. Led and completed multiple improvements to current medical device
  - **Machine Design**: Designed manufacturing machines and fixtures for on-site production
  - **Process**: Led and assisted in machine setup, troubleshooting, programming, datalogging, and calibration for ultrasonic welders, other manufacturing equipment
- **Schlumberger** — Cairo, Egypt
  Cameron Subsea Field Engineer — *Dec 2019 - Mar 2020*
  - **Equipment Maintenance**: Assisted with tearing down and rebuilding subsea valving and well test equipment. Responsible for pressure testing, seal maintenance, lubrication, hydraulic troubleshooting

Projects

- **Music Beat Detection and Display**: Used a Teensy 4.0 (ARM Cortex M7) and the ARM Keil signal processing libraries to develop a high speed, real time beat tracking algorithm that listens to the environment and uses a custom wrap around LED display to "dance" with the beat. Also has a "spectrogram" mode that graphs the frequency distribution of surrounding noise
- **MIT ID Reader**: Expanded on MIT's 6.002 analog RFID lab to add digital signal generation and reception. Project uses an antenna pair to activate the RFID card and read the phase-shift-keyed response. Allows this device to read the ID code from static 125kHz RFID cards
- **Combustion Chamber Design**: MIT Institute for Soldier Nanotechnologies. Designed and manufactured sealed 500 watt propane micro-combustors. Operating temperature of 1100^{o}C, entire assembly required to be gas-tight in a vacuum. Studied flame propagation and thermal modeling to optimize chamber geometry and flame distribution

Honors and Awards

- Whitelaw Design Prize - originality in design
- Highest scoring robot, MIT 2.007 robotics competition

Other Experience

- **Emergency Medical Technician - MIT EMS** — Cambridge, MA
  Volunteered with MIT's 24/7 student run ambulance service, Operations Director 2018-2019 — *Jan 2017 - Jun 2022*

- **Washington County Service Authority** — Abingdon, VA
  Summer Intern — *Jun - Aug 2017*
  Collected & analyzed wastewater flow data to locate system branches with excess rainwater ingress. Responsible for chlorine monitoring and water flushing in 900 miles of pipelines. Designed an Excel tool to better predict summer flushing volumes to maintain adequate chlorine levels in slow moving lines

- **Farm Manager** — Castlewood, VA
  Cattle, Organic Vegetables — *Jun 2007 - Aug 2015*
  Managed herds of cattle from the age of 14-22. Responsible for herd health, vaccinations, delivering calves, feed & water systems, fencing, & farm equipment maintenance