

Conor Kirby

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Using the knowledge and experience I have gained and will continue to gain from school, work and my peers, I aspire to create technology that enables those with neurological and neurodevelopmental disorders to reach their full potential

Education

Imperial College London – London, UK

October 2020 – September 2021

- MSc in Advanced Mechanical Engineering

Massachusetts Institute of Technology – Cambridge, MA, USA

June 2015 – June 2019

- B.S. in Physics and Mechanical Engineering – 4.6/5.0 GPA
- Relevant Coursework: Manufacturing Processes (Student & Tutor), Medical Device Design (Student and Mentor), Probability and Statistics, Numerical Methods, Waves and Vibrations, Quantum Mechanics

Professional Experience & Research

Sumitomo Heavy Industries Robotics Group– Yokosuka, Japan

June 2019 – June 2020

Mechanical Engineer

- Redesigned the power transmission system for a wall-climbing robot, increasing the angle limit of slope the robot can climb by 30%
- Designed a line following and velocity control test environment in Unity with C#, enabling testing of control schemes
- Designed experiments to compare a classical PID control scheme with a surface adaptive PID scheme

Bose – Framingham, MA, USA

June 2018 – December 2018

Mechanical Engineer

- Designed and built an Augmented Reality Headset using 3D printed parts, thermoformed optics and components modified from other Virtual Reality Headsets
- Prototyped over a dozen designs to better understand the ergonomic factors, such as ease of use, comfort and eye strain
- Modified the design to incorporate Bose spatial audio technology and created an audio experience in Unity with C#

Laser Interferometer Gravitational-Wave Observatory (LIGO) – Cambridge, MA, USA

June 2017 - August 2017

Research Assistant

- Designed and tested an optical setup that utilizes a Pound-Drever-Hall servo loop to improve LIGO's squeezed green light generation
- New design is 10X better than the previous design at converting red light to green light and would theoretically allow parts of LIGO's laser system to run at lower power
- Conducted electronics testing, circuit board design, signal processing, CAD milling and Arduino programming to design and test a miniature cosmic muon counter

MIT Media Lab – Cambridge, MA, USA

January 2017 - June 2017

Electrical Engineer

- Designed electronics for SPRING, a smart toy for children with neurological disorders
- Designed a piezo microphone amplifier circuit to sense and track the child's interaction with the toy, allowing for new studies to be conducted on their cognitive development
- Used EAGLE and a PCB CNC to build a surface mount piezo amplifier circuit that would fit inside the toy

Skills

Software & Hardware: Solidworks, Blender, Unity, Python, C#, Arduino, Raspberry Pi

Workshop Experience: Injection Molding, Thermoforming, CNC Lathe, CNC Mill, PCB Mill, 3D Printer, Laser Cutter

Languages: English – Native, Japanese – Lower-Intermediate (JLPT N4), Spanish – Elementary

Involvement

Youth Innovation Summit – Soroti, Uganda

January 2019

Teacher

- In charge of running and teaching a two-week innovation summit for 60 children
- Developed and taught lessons on computer science thinking, mechanical design and basic electronics, and supported students while they worked on their own energy and home security projects

MIT Club Gymnastics - Cambridge, MA

September 2015 – September 2018

Competitor and Treasurer

- Competed in Club Nationals in 2016, after only one year of experience, and again in 2017
- Executive team member, managing the Men's Team budget of over \$10,000

Disability Sports Coach – London, UK

September 2014 - August 2015

Sports Coach

- As a volunteer coach I helped assist with the organization and coaching of sports sessions across London for disabled children and adults as part of the Disability Sports Coach charity
- British Gymnastics Accredited Level 1 Coach