

Patrick Roche

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Team-oriented and results-driven Electrical Engineering major at the University of St. Thomas. Proficient in Java, C, C++, Arduino, MATLAB, Python, HTML, CSS, and Javascript. Hands-on experience applying technical skills to real-world problems as Medtronic Summer Engineering Intern and as Student Worker in engineering research lab developing educational and entertainment applications.

EDUCATION

University of St. Thomas, BS in Electrical Engineering, anticipated May 2022, GPA 3.63.

Woodbury High School, High School Diploma with Honors, May 2018, GPA 3.9.

EMPLOYMENT

Medtronic Summer Engineering Internship (May 2021 - August 2021)

- Member of Electrical Systems Design Team working on hardware/firmware integration testing simulations for EV ICD 2.
- Met with mentor as needed to ensure timely and proper progress on project checkpoints.
- Presented results of testing simulations to hardware/firmware integration team.

Playful Learning Lab University of St. Thomas (September 2018 - Present)

- Provide STEAM resources for a variety of projects designed to utilize education, engineering, and entertainment concepts in the development of educational materials for teachers.
- Project lead for Circus Science - a project using electronics to create high-tech responsive costumes for circus performers.
- Lead electronics engineer for Art In Space - designed and prototyped digital circuitry and fabricated printed circuit boards for educational space flight mission on Blue Origin New Shepard launch vehicle.
- Presented and performed at a virtual conference with over 500 attendees in addition to tech support roles and assisting in hosting the conference.

The Enigmatist Internship (May 2019 - January 2020)

- Worked as technical assistant for professional magician in New York City. Applied engineering and technical expertise for confidential duties integral to the success of performances and performed emergency troubleshooting as needed.

David Kwong (May 2019 - Present)

- Provide magic and engineering consultation for various commercial projects.
- Designed website framework and graphical user interface for commercial magic application.

Ashland Productions (2014 - 2018)

- Worked as Senior Technical Counselor for theatre camps with campers ranging from elementary through middle school.

PUBLICATIONS AND PRESENTATIONS

Art in Space: Using Art to Interest K-12 Students in Aerospace Design - 2020 ASEE Virtual Conference

- Winner of the Aerospace Division's Superior Student Paper Award.

Circus Science: Designing Responsive Flying Trapeze Performance Costumes - 2020 ACM TEI Conference, attended in Sydney, Australia

2019 TED Conference - Selected to demonstrate Circus Science research at TED Conference, attended in Vancouver, British Columbia

HONORS AND AWARDS

Academic Scholarships & Awards

- University of St. Thomas Dean's List
- University of St. Thomas Scholarship
- American Legion R.H. Stafford Memorial Scholarship
- Air Force Association of Minnesota Cadet Of The Year Scholarship

High School Honors

- Earned letters for Academics, AFJROTC, and Theatre
- Member of National Honor Society
- Academic Honor Roll

Theatre Awards

- Hennepin Theatre Trust Spotlight Awards for Outstanding Achievement in Stage Management and Technical Theatre (2014-2016) and Outstanding Achievement in Student Technical Direction (2017).

EXTRA-CURRICULAR ACTIVITIES

Woodbury High School Air Force JROTC Program - Cadet Corps Commander of unit with over one hundred members. Air Force Association Cadet Of The Year 2018. AFJROTC Student Of The Trimester. Multiple national achievement awards including outstanding cadet and distinguished cadet of the year for each year as member of corps. Led numerous drill teams, community outreach, and student recruitment projects.

Woodbury High School Drama Club - Stage managed and served as student technical director for eight feature shows. Frequently requested to lead tech crews for school programs outside drama department.

Tartan Community Theatre (2018)

- Lead sound technician for production of Mary Poppins.
- Designed and constructed set pieces and all special effects for production.

Woodbury Middle School

- Selected to help lead and teach middle school students theatre technical engineering skills for four musical programs.