

Patrick Carpanedo

Master's Student

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 Patrick Carpanedo

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 github.com/pfcarp

 Boston, MA

Education

Master's Computer Science *Boston University* **MA, USA** 2021-Present
Bachelors of Arts in Physics *College of the Holy Cross* **MA, USA** 2016-2020
High School Diploma *Boston College High School* **MA, USA** 2012-2016

Research Interest

Investigating, implementing and testing analog and digital hardware to provide predictable and robust operations. Currently, focused on novel uses with hybrid CPU+FPGA platforms to potentially provide a transparent memory profiler for offboard analysis.

Professional Experience

Volunteer Directed Study Mentor (*Boston University*) **Boston, MA, USA** Spring 2024

- Assisting undergraduates with hardware associated with F1tenth related projects
- Teaching undergraduates the basics of electronic design and electronic components
- Ensuring the safety of undergraduates when handling high current and sensitive electronics

Volunteer Directed Study Mentor (*Boston University*) **Boston, MA, USA** Spring 2024

- Guiding undergraduates on designing low-level software with respect to the underlying hardware with a focus on timing requirements for a Persistence of Vision (PoV) Display
- Assisting undergraduates understand and debug the gap between code and physical outputs
- Customizing the circuit layout for additional features or corrections from previous student attempts

UR2PhD Mentor (*Computing Research Association*) **Boston University** Fall 2023

- Attended weekly meeting to learn about mentoring skills and developed a mentoring style
- Lead weekly individual and group meetings with four undergraduates to develop hardware/software modules for a Persistence of Vision (PoV) Display
- Fabricated or sourced circuit boards, electrical components, and hardware after verifying compatibility and tolerances.
- Guided undergraduates on how to search, read, and verify academic research papers

Volunteer Directed Study Mentor (*Boston University*) **Boston, MA, USA** Spring 2023

- Taught undergraduates the basics of Vivado Design Suite and functions of FPGAs
- Delegated tasks to undergraduates in order to debug and learn about Processor, FPGA, and ethernet Connectivity.
- Arranged weekly meeting to discuss undergraduate findings on particular modules and board designs while evaluating the proceeding goals.

Research Assistant, (*College of the Holy Cross*) **Worcester, MA, USA** Summer 2019

- Gathered and assembled subsystems of the Beam Profile Monitor (BPM) system
- Verified electrical tolerances and timings each components of the BPM systems
- Debugged the BPM system through a gamut experiments which were logged and relayed to the leading faculty
- Arranged presentations and discussions weekly on the experiment findings with a different research group

Student Technical Director, (*College of the Holy Cross Alternate College Theatre*) **Worcester, MA, USA** 2019-2020

- Collaborated with the college technical director and student scene designer to construct sets used in student plays
- Created schematics to follow when cutting lumber and assembling pieces of the set
- Coordinated groups of students on tasks to assemble and furnish sets
- Communicated with directors and set designers on progress of set and accommodated any desired details or changes

Shop Assistant, *(College of the Holy Cross Fenwick Theatre)*

Worcester, MA, USA 2019-2020

- Assisted in creating sets for the department plays by following a schematic, manufacturing, and assembling components, and compensating for any error along the way
- Guided assistants on correct use of tools and provided advanced techniques to address certain cases
- Relayed instructions from Technical Director to sub group(s)
- Provided assistance to other technical teams within the theatre

Resident Assistant, *(College of the Holy Cross)*

Worcester, MA, USA Fall 2017-2019

- Acted as a resource to and ensured the safety of 38 students in their residence hall
- Planned events with Resident Assistant team members for residents and building
- Performed safety checks and engaged with residents throughout the semester
- Relayed information bi-weekly regarding the dormitory and residents in a concise manner to dormitory supervisor

Publications

- Weifan Chen, Ivan Izhbirdeev, Denis Hoornaert, Shahin Roozkhosh, **Patrick Carpanedo**, Sanskriti Sharma, and Renato Mancuso. Low-Overhead Online Assessment of Timely Progress as a System Commodity. In 35th Euromicro Conference on Real-Time Systems (ECRTS 2023). Leibniz International Proceedings in Informatics (LIPIcs), Volume 262, pp. 13:1-13:26, Schloss Dagstuhl – Leibniz-Zentrum für Informatik (2023) <https://doi.org/10.4230/LIPIcs.ECRTS.2023.13>
[ECRTS](#)

Honors & Awards

- Holy Cross Grant

Skills

- **Programming:** C, Java, Verilog
- **Design:** CAD, PCB design, Woodworking
- **System Administration:** network architecture, virtual machine management

Languages

- **English** [Native]
- **Portuguese** [Fluent]
- **Spanish** [Fluent]