Henry Cheung

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Education

Massachusetts Institute of Technology

MASTER'S DEGREE IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE - GPA: 4.6/5.0 *Feb 2023*

- **Master's Thesis:** "Computing Fibers: Architectures and Applications"

BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE *June 2019*

Experience

Research Laboratory of Electronics *Aug 2021 – Present*

GRADUATE STUDENT/RESEARCHER *Cambridge, MA*

- Created the first multi-material fibers with built-in computational and sensing elements by designing the electronics and embedded programs, which can be integrated into textiles to create smart fabrics
- Designed embedded system architectures, circuit design, and rigid-flex foldable PCBs
- Programmed microcontrollers and BLE (Bluetooth) system-on-chips to create on-fabric-networks
- Tested piezoelectric multi-material fibers for use in acoustic detection and emission, specifically active noise cancellation, by building acoustic test chambers and designing data acquisition systems
- Mentored 4 undergraduates to build embedded system demonstrators in smart fibers and fabrics

Advanced Functional Fabrics of America *Jan – June 2021*

LEAD HARDWARE ENGINEER *Cambridge, MA*

- **Patent:** System with electronic functionality in a flexible medium and methods of manufacturing the same. *WO2022072614A1; US 2020, International 2022*
- Led agile teams tasked with building projects at the nexus of hardware and textiles leading to significant follow-on funding from both commercial and DoD customers
- Determined project requirements, timelines, and budgets while interfacing directly with customers
- Conducted customer discovery for smart textiles and other technology in a range of markets
- Designed and tested minimum viable hardware & embedded software products based on customer feedback

EMBEDDED SYSTEMS ENGINEER *July 2019 – Dec 2020*

- Designed and built the hardware and software of embedded systems for a range of harsh environments, including extremely high temperature to high pressure water immersion
- Created novel system architectures and implementations leading to a patent and several provisional patents

Pascall Systems *Sept 2018 – Feb 2019*

INTERN ELECTRICAL/EMBEDDED ENGINEER *Cambridge, MA*

- Developed mobile app and device communication protocols for an electroencephalogram (EEG) device

Loro *June – Aug 2018*

INTERN ELECTRICAL/EMBEDDED ENGINEER *Cambridge, MA*

- Developed an assistive camera device for wheelchairs, enabling paralyzed users to communicate and navigate
- Represented company in elevator pitches with judges at the Microsoft Imagine Cup World Finals in Seattle

Teaching

Fall 2021- Spring 2023	**Teaching Assistant:** Computing Fabrics (3.173/373)	*MIT*
Fall 2016- Winter 2018	**Electronics Training Chair,** Project Manus: Makerlodge	*MIT*
Spring, Fall 2018	**Lab Assistant:** Introduction to Embedded Systems (6.08)	*MIT*
Fall 2017	**Lab Assistant:** Circuits and Electronics (6.002)	*MIT*

Relevant Skills

Software Altium, Eagle, LTSpice, Fusion 360

Languages C/C++, Python, Javascript, Java, MATLAB

Rapid Prototyping PCB/EDA, CAD, 3D printing, laser cutter, waterjet, hand tools, etc.