Miles Dai

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Education

Massachusetts Institute of Technology **Cambridge, MA**
Candidate for Bachelor of Science in Electrical Engineering and Computer Science *June, 2020*
Candidate for Masters of Engineering in Electrical Engineering and Computer Science *June, 2021*

- GPA: 4.8/5.0
- Coursework: Nanoelectronics and Computer Systems, Digital Systems Laboratory, Feedback Control, Power Electronics Lab, Signals and Systems, Computation Structures, Introduction to Circuits and Electronics (Lab Assistant)

Professional Experience

Amazon Web Services **East Palo Alto, CA**
Software Engineering Intern *June 2019 - August 2019*

- Created software for optimizing deep learning models for various hardware architectures (e.g. Intel, ARM, Nvidia, Mali)
- Added Keras support to the core AWS SageMaker Neo service, providing the ability for customers to achieve over 2x increases in inference speed on ARM and Intel processors.

Dimensional Insight **Cambridge, MA**
Software Engineering Intern *June 2018 - August 2018*

- Created data visualizations with D3.js for use in a business intelligence dashboard web interface

Affective Computing Group, MIT Media Lab **Cambridge, MA**
Undergraduate Researcher *May 2017 - May 2018*

- Applied computer vision techniques and deep neural networks for predicting the engagement levels of autism-spectrum patients on a per-patient basis to improve the effectiveness of autism therapy
- Publication: O. Rudovic, J. Lee, **M. Dai**, B. Schuller, R. W. Picard, "Personalized machine learning for robot perception of affect and engagement in autism therapy", *Science Robotics*, 27 Jun 2018: Vol. 3, Issue 19, eaao6760

Distributed Robotics Lab, MIT Computer Science and Artificial Intelligence Laboratory **Cambridge, MA**
Undergraduate Researcher *January 2017 - May 2017*

- Prototyped a spherical, auxetic, volumetrically-expanding robot module to help streamline the robot design and fabrication process through the use of modular components controlled by a network of Texas Instruments MSP430 microcontrollers

Projects

Next Make, Solder Your Own Circuit Board Event **2016-present**

- Programmed an ATtiny microcontroller as part of an annual circuit board soldering activity for over 50 incoming freshmen
- Designed PCBs in Eagle and had them manufactured in bulk

Coursework Projects

- Induction Heater (*6.1311: Power Electornics Lab*): contactless heating from a resonant tank and a MOSFET totem pole
- RFID Lab (*6.002: Circuits and Electronics*): designed a lab in which students build an RFID reader

Automated Jigsaw Puzzle Solver **September 2017**
HackMIT – Hackathon Project

- Created a program in under 24 hours to solve jigsaw puzzles given only images of the pieces
- Used heuristics such as edge convexity and color-matching of puzzle pieces using Python and OpenCV to search for probable fits

Compact, Low-Cost Colorimeter **May 2016**

- Designed and built a colorimeter (device to measure light absorbance of solutions) for under $60 with off-the-shelf parts

Leadership and Volunteering

Next Makerspace Chair **2018-present**

- Supervised the planning and construction of a makerspace within a student dorm

Next Make, President **2016-present**

- Programmed games in C for an ATtiny microcontroller as part of a circuit board soldering activity for 50 MIT freshmen

MIT Science Olympiad, Planning Committee **2016-present**

- Organize an annual Science Olympiad tournament at MIT for over 1,000 high school students

Skills

Programming Languages: Python, SystemVerilog, C, Java, MATLAB, HTML, CSS, JavaScript with D3.js
CAD/Digital Fabrication: Solidworks, Autodesk Inventor, EAGLE, Laser cutting, 3D printing, waterjet, mill