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Ethan Weber

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EDUCATION

Massachusetts Institute of Technology (MIT)

M.Eng in Electrical Engineering and Computer Science

BS in Electrical Engineering and Computer Science | **GPA:** 4.8/5.0

Relevant Coursework: Computer Vision, Machine Learning, Robotics, Perf. Eng., Algorithms

Cambridge, MA

Feb 2020 – May 2021

Sep 2016 – May 2020

New Holstein High School:

GPA: 4.0/4.0 | **Rank:** 1/90

New Holstein, WI

Sep 2012 – May 2016

PUBLICATIONS

Dim P. Papadopoulos*, **Ethan Weber***, and Antonio Torralba. "Scaling up instance annotation via label propagation." Under Review, 2020. | [Paper](#) | [Supplementary](#)

Ethan Weber, Nuria Marzo, Dim P. Papadopoulos, Aritro Biswas, Agata Lapedriza, Ferda Ofli, Muhammad Imran, and Antonio Torralba. "Detecting natural disasters, damage, and incidents in the wild." In European Conference on Computer Vision (ECCV), 2020. | [Project Page](#) | [Paper](#) | [Code](#)

Ethan Weber and Hassan Kane. "Building Disaster Damage Assessment in Satellite Imagery with Multi-Temporal Fusion." In AI For Earth Sciences Workshop at ICLR, 2020. | [Presentation](#) | [Paper](#) | [Code](#)

EMPLOYMENT

Research at the MIT CSAIL

Master's Student in the [Torralba Lab](#) (w/ Prof. Antonio Torralba)

Cambridge, MA

Sep 2019 – Present

- Published first-author paper to ECCV 2020 on detecting natural disasters in imagery.
- Working on three projects: (1) depth prediction with multi-view invariant constraints, (2) efficient instance segmentation dataset creation, and (3) damage assessment of imagery using a latent space.
- Submitted a co-first-author paper for (2).
- Mentoring two students for projects (1) and (3).

Undergraduate Researcher in the [Robot Locomotion Group](#) (w/ Prof. Russ Tedrake)

Sep 2017 – May 2019

- Created a pipeline for self-supervised instance segmentation and automatic sparse keypoint discovery for robotic manipulation. | [Project Page](#) | [Code](#)
- Worked with NASA's humanoid robot, Valkyrie and Atlas for motion planning and fall recovery. Implemented algorithms in and out of simulation. Used [Drake](#) and collaborated with Toyota Research Institute.

Undergraduate Researcher in the [Model-Based Embedded and Robotics Systems Group](#) (w/ Prof. Brian Williams)

Sep 2016 – Jun 2017

- Worked on using a land rover and a quadcopter in cooperation to navigate an area and perform tasks autonomously.

Dense Reconstruction for Augmented Reality

Computer Vision Software Engineering Intern at Niantic

Sunnyvale, CA

May 2019 – Aug 2019

- Created dense reconstruction software for real-time augmented reality applications.

Art Recommendations with the Microsoft HoloLens

Deep Learning Intern at Microsoft

Cambridge, MA

Jan 2019 – Feb 2019

- Wrote an augmented reality application for the Microsoft HoloLens to recommend art with computer vision in The Metropolitan Museum of Art. | [Code](#)

Subject Tracking for Autonomous Quadcopters

Deep Learning Intern at Skydio

Redwood City, CA

Jun 2018 – Aug 2018

- Created and evaluated convolutional recurrent neural networks for trajectory prediction using images for semantic scene understanding.

Deep Learning and Computer Vision

Deep Learning Intern at The Markov Corporation

Palo Alto, CA

Jan 2018 – Feb 2018

- Worked on deep learning for stereo vision with computer vision algorithms in OpenCV and CNNs in Keras and TensorFlow.

Autonomous Vehicle Software Development for Volvo Cars

Summer Intern at Zenuity (Volvo / Autoliv)

Detroit, MI

Jun 2017 – Aug 2017

- Implemented computer vision algorithms, tests, and created software for autonomous valet parking.

LEADERSHIP & MENTORSHIP

Summer STEM Institute (SSI)

Research Mentor

Virtual

Jul 2020 – Aug 2020

- Taught two high school students computer vision by mentoring on projects. One student's paper titled "Interpretability in Deep Learning Models Used to Classify Building Damage in Satellite Imagery" was top ten in SSI and later accepted to a NeurIPS 2020 [workshop](#) on climate change.

TechX

SpecialX Director

Cambridge, MA

Mar 2018 – May 2019

- Organized VC and startup events, tech talks, an AR/VR demo day, and experimented with new ways to improve MIT's campus through tech.
- Organized recurring events called "Conversations" to connect like-minded students on campus over free meals.

PROJECTS, AWARDS, AND HONORS

Atenta: Correcting Posture with Webcams

Mar 2018 – Present

- Built an application to detect and correct posture with laptop webcams. | [Blog Post](#)

Building Damage Assessment Competition Award Winner

Spring 2020

- Placed 8th overall and received a monetary prize in the DIU (Defense Innovation Unit) satellite imagery competition [xView2](#) to reduce the time needed for emergency response. More than 3500 people joined the competition and over 2000 models were submitted.
- Presentation at the AI for Earth Sciences ICLR 2020 [workshop](#). | [Presentation](#) | [Paper](#) | [Code](#)

Interact Fellow

Spring 2020

- Selected as one of 50 new Fellows to join [Interact](#)--a community to spur thoughtful conversations, entrepreneurial ventures, and intentional impact to make the world better.

Top [SuperUROP](#) Poster Prize

Spring 2019

- Selected as one of 20 students for a top poster in a showcase with 100+ students. My poster was on the robotics perception project with Prof. Russ Tedrake.

Hackathon Award - "Best Travel Hack"

Spring 2019

- Received the "Best Travel Hack", sponsored by Concur, and the "Best Use of Amadeus APIs", sponsored by Amadeus, at HackMIT.

Hackathon Award - "Best Overall Use of Microsoft Technology"

Summer 2015

- Microsoft awarded us with "Best Overall Use of Microsoft Technology" at the University of Michigan's 36-hour hackathon (MHacks 6).

FIRST Robotics Dean's List Finalist

Spring 2015

- Recognized as one of two high school students among the 60 teams at the Wisconsin FIRST Robotics Competition. The award is given to "great examples of leaders who have led their teams and communities to increased awareness for FIRST and its mission. These students have also achieved personal technical expertise and accomplishment."

MEDIA COVERAGE

MIT CSAIL Alliances Student Spotlight | [Link](#)

Fall 2020

MIT CSAIL News Article "Detecting and responding to incidents with images" | [Link](#)

Summer 2020

OTHER

Skills: Python, PyTorch, TensorFlow, Keras, C++, C, Java, JavaScript, HTML, CSS, C#, Linux, Hardware, CAD

Activities: TechX, Jump Rope Club Co-founder, Camp Kesem, AI at MIT, Contracting, CSAIL Research, Zeta Psi Fraternity, Interact Fellow