David Forman—CV

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EDUCATION

Massachusetts Institute of Technology — Cambridge, MA 2021—

- PhD student in Electrical Engineering and Computer Science
  Current research interests: computer vision, time series, interactive machine learning (active learning & inference, human-machine interface, optimal experiment design)

Hillsdale College — Hillsdale, MI May 2021

- Bachelor of Science | Major: Physics | Minor: Mathematics
- GPA **3.995** (4.0 in major)

PUBLICATIONS & PRESENTATIONS

Front Cover Article — Journal of the Acoustical Society of America, Express Letters 2021
Forman, David J., et al. "Validating Deep Learning Seabed Classification via Acoustic Similarity." *JASA Express Letters* 1.4 (2021): *040802* https://doi.org/10.1121/10.0004138

Oral Presentation — 179th Meeting of the Acoustical Society of America, virtual 2020
Forman, David J., Tracianne B. Neilsen, and David F. Van Komen. "A Classification Approach to the Characterization of Seabed Geoacoustic Profiles via Deep Learning." *JASA* 148.4 (2020): 2444-2444. https://doi.org/10.1121/1.5146742
Recorded video: https://www.youtube.com/watch?v=9lQkjBUZNm0&feature=youtu.be

Poster Presentation— 223rd Meeting of the American Astronomical Society, Seattle, WA 2019
Forman, David J., et al. "Distinguishing Bright Pulses from RFI via Machine Learning Using Single-Pulse Data from PSR J1713+0747." *American Astronomical Society Meeting Abstracts*, Vol 233. 2019. http://adsabs.harvard.edu/abs/2019AAS...23315315F
Poster content: https://drive.google.com/file/d/1rtf-Z-fgGs1HetzE3vOOb6NURusCgUJL/view

UNDERGRADUATE RESEARCH

NSF REU Research Assistant in Computer Vision — UC San Diego 2020

- Created an image segmentation user interface via interactive machine learning
- Accelerated conservation labeling by an order of magnitude at Scripps Inst. of Oceanography
- Implemented in Java; created website https://davidjasperforman.github.io/MLPaintWeb/
- Advisors: Prof. Ryan Kastner and Prof. Curt Schurgers

NSF REU Research Assistant in Acoustics — Brigham Young University 2019-2021

- Published first-author paper in JASA–Express Letters, featured on the front cover
- Doubled the classification accuracy of the group's PyTorch CNN
- Designed a measure of acoustic similarity between seabeds
- Advisor: Prof. Tracianne Neilsen

Churchill Fellow — Hillsdale College 2019-2021

- Initiated automated transcription of historical documents, via Python and a Google Cloud API
- Prototyped a search engine for textual search of documents
- Director: Dr. Colin Brown

Research Assistant in Astrophysics — Hillsdale College 2018-2020
- Distinguished neutron star radio pulses from interference using scikit-learn machine learning
- Discovered a bright single pulse, which I presented at the American Astronomical Society
- Advisor: Prof. Timothy Dolch

HONORS

Matthew Lorber (1956) Presidential Fellowship, MIT 2021

British Marshall Scholarship Finalist 2020

Barry Oxford Scholarship Winner 2020

2nd Place, Solo Strings Competition, Michigan State ASTA 2020

National Honorary Societies
- Kappa Mu Epsilon — Mathematics Honorary
- Phi Kappa Phi — Academic Honorary
- Sigma Pi Sigma — Physics Honorary
- Sigma Zeta — Science and Mathematics Honorary

EXTRACURRICULAR

Volunteer Programming Teacher — Spring Branch Academy, Jonesville, MI Spring 2021
- Taught 6 students; met weekly for 6 weeks
- Used the UC Berkeley *Snap!* blocks programming language

Data Visualization TA — Hillsdale College Fall 2018
- Graded data visualizations for 30 students over a 4-day intensive 1-credit course

Discussion Forum Leader — Part of 4-person team at Hillsdale College 2018-2021
- Helped set topics and lead discussion for a discussion forum
- Weekly participation: ~12; Event attendance for panels: ~30

Society of Physics Students — Astronomy Chair, Hillsdale College 2019-2021
- Served as a star-guide and telescope handler for a 100-student astronomy night
- Helped develop two astronomy tests for the 2021 Science Olympiad, Hillsdale College

Volunteer Retirement Home Musician — Music in the Community, Hillsdale College 2017-2020
- Once per week, performed music for and engaged the elderly