

# David Forman—CV

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## EDUCATION

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### Massachusetts Institute of Technology — Cambridge, MA

- PhD student in Electrical Engineering and Computer Science (EECS) expected 2027
- Master of Science in EECS 2023
  - Thesis: “[Bayesian Time Series Structure Learning: Formulation of an Event Driven Prior Distribution](#),” advisor John W. Fisher III, Senior Research Scientist
- Research interests: machine learning, computer vision, active learning
- Languages: Python, Java

### Hillsdale College — Hillsdale, MI

- Bachelor of Science in Physics | Minor: Mathematics 2021
- GPA 3.995 | *The Outstanding Physics Major Award*

## PUBLICATIONS & PRESENTATIONS

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### 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

Recorded video: <https://www.youtube.com/watch?v=9lQkjBUZnm0&feature=youtu.be>

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>

### Poster Presentation — 223rd Meeting of the American Astronomical Society, Seattle, WA 2019

Poster: <https://drive.google.com/file/d/1rtf-Z-fgGs1HetzE3vOO6NURusCgUJL/view>

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>

## UNDERGRADUATE RESEARCH

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### 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

- 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

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Matthew Lorber (1956) Presidential Fellowship, MIT 2021

**British Marshall Scholarship Finalist** 2020

Barry Oxford Scholarship Winner 2020

2<sup>nd</sup> Place, Solo Strings Competition, American String Teachers Assn., Michigan 2020

Concerto Competition Winner, Hillsdale College Symphony Orchestra 2019  
 Performance with orchestra: <https://vimeo.com/329844650>

### National Honorary Societies

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

## TEACHING

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### Teaching Assistantships

- Head TA, Advances in Computer Vision — MIT 2024
  - Organized a team of 17 TAs for a class of 600+ students
  - Helped students formulate projects; held weekly office hours; graded
- TA, Advances in Computer Vision — MIT 2023
  - Helped students formulate projects; held weekly office hours; graded
- TA, Data Visualization — Hillsdale College 2018
  - Graded data visualizations over a 4-day intensive 1-credit course

**Volunteer Programming Teacher** — Spring Branch Academy, Jonesville, MI 2021

- Taught 6 students; met weekly for 6 weeks
- Used the UC Berkeley *Snap!* blocks programming language