

M. Jeffrey Mei, Ph. D.

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WORK/RESEARCH EXPERIENCE

Data Scientist II, Wayfair LLC, Boston MA, USA

December 2020 –

- Developed transformer model using self-attention with customers' browse contexts to serve product recommendations, improving order rates by 1% and gross revenue by \$35M (Apache Airflow, Google Cloud AI Platform Training, PyTorch, git, Docker)
- Created interactive tool (bokeh) to interpret and visualize learned item embeddings, and demonstrated that the model was learning product style, price and popularity attributes implicitly
- Converted recommendation models from on-premise Vertica/Hive queries and local storage to Google Cloud Platform (Google Big Query, Google Cloud Storage), eliminating costs of on-premise compute/storage

Graduate Research Assistant, MIT/WHOI Joint Program

June 2015 – September 2020

- Created a convolutional neural network to analyze sea ice imagery to infer ice thickness and snow depth from surface topography, reducing error in sea ice thickness estimates by 60% (PyTorch, OpenCV, AWS EC2)
- Developed a textural segmentation algorithm to distinguish different deformed sea ice surfaces which increased amount of snow depth data available to researchers by 10x via textural extrapolation
- Collected sea ice data using surface laser (lidar) scans during 3-month winter fieldwork in Antarctica

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA

June 2015 – September 2020

Woods Hole Oceanographic Institution, Woods Hole, MA

Ph. D., Mechanical Engineering (major: Oceanographic Engineering; minor: Data Science)

GPA: 4.7/5.0

- [Dissertation](#): "Morphological Approaches To Understanding Antarctic Sea Ice Thickness"

New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

August 2011 – May 2015

B. S. cum laude, Physics and Mathematics.

GPA: 3.8/4.0

- New York University Honors Scholar, 2015

- Semester study abroad at NYU Berlin/Humboldt-Universität zu Berlin (Germany), Spring 2013

- Full scholarship, 2011 – 2015

TEACHING AND LEADERSHIP EXPERIENCE

12.720 Elements of Modern Oceanography, MIT

Fall 2018

Teaching assistant

- Explained physical oceanography concepts to 25 first-year graduate students with no prior physics experience
- Improved scientific rigor of students research projects with one-on-one feedback

Summer Math Review, WHOI

2017 – 2018

Organizer and instructor

- Organized courses and assigned instructors for summer math review for ~20 incoming graduate students
- Prepared class notes for and taught ordinary/partial differential equations, data analysis, numerical methods

MIT Badminton Club, MIT

2016 – 2020

Treasurer 2016 – 2019, President 2019 – 2020

- Managed club financials (annual budget \$8000), including equipment ordering and fundraising
- Oversaw player registration, facilities reservations and liaised with sponsors for the Boston Open (2nd-largest badminton tournament in the USA)

OTHER SKILLS

Fluent in English, German, Mandarin Chinese; conversant in Russian

Experienced with Python (numpy/sklearn/pytorch/pandas), SQL, OpenCV, Linux/Unix, bash, git, GCP (Google Cloud Platform), Docker, AWS (Amazon Web Services), Aerospike, Hive, Presto, Latex