Jeffrey Mei

77 Massachusetts Ave 54-814, Cambridge MA 02139 | +1 617-301-0213 | mjmei@mit.edu | jeffreymei.github.io/

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA 02139
Woods Hole Oceanographic Institution, Woods Hole, MA 02543
Ph.D., MIT-WHOI Joint Program in Applied Ocean Science & Engineering, expected August 2020, GPA: 4.8/5.0
- Dissertation: "Morphological Approaches To Understanding Sea Ice Thickness"
- MIT Graduate Student Leadership Institute Fellow, Fall 2016

New York University Abu Dhabi, Abu Dhabi, UAE
B.S. *cum laude*, May 2015. Major in Physics and Mathematics, GPA: 3.8/4.0
- New York University Honors Scholar, 2015
- Semester study abroad at NYU Berlin/Humboldt-Universität zu Berlin, Spring 2013
- Awarded full scholarship to NYU Abu Dhabi, 2011-2015

RESEARCH EXPERIENCE

Graduate Research Assistant. MIT/WHOI, 2015-2020
- Applied convolutional neural networks to sea ice imagery to infer ice thickness from topography, and visualized the learned filters using OpenCV and PyTorch
- Made an interactive GUI for processing sea ice imagery (segmentation, floe delineation) using OpenCV
- Took part in 3-month winter field expedition to Antarctica to collect sea ice thickness measurements and surface topography laser scans
- Participated in ICESat-2 Hack Week sponsored by the University of Washington, wrote code for compiling and visualizing data interactively using Holoviews and Bokeh modules (/ICESAT-2HackWeek/Snowblower.git)
- Authored peer-reviewed publication in *The Cryosphere (*doi:10.5194/tc-2019-140, "Estimating Early-Winter Ice Thickness From Deformed Ice Morphology.")

Undergraduate Research Assistant. NYU Abu Dhabi, 2014-2015
- Developed novel method for localizing cracks in glaciers using seismic signals
- Visualized seismic spectrograms using Python to create a frequency bandpass filter, with automated detection of seismic shock wave onset
- Authored peer-reviewed publication in *The Cryosphere* (doi:10.5194/tc-11-609-2017, "Calving localization at Helheim Glacier using multiple local seismic stations.")

Undergraduate Research Assistant, NYU Abu Dhabi, 2011-2013
- Fitted multilinear regressions with astrophysical data, visualized with interactive 3D plots (Matplotlib), to show statistical links between astrophysical variables
- Presented results at American Astronomical Society meeting, ([abstract], Correlations of Circumnuclear Water Maser Luminosity with AGN Activity and SMBH Mass.")

TEACHING EXPERIENCE

Elements of Modern Oceanography, MIT, Fall 2018
Teaching assistant
- Corrected weekly homeworks for students
- Led weekly recitations to supplement lecture mateiral

Summer Math Review, WHOI, 2017-2018
Organizer and instructor
- Selected topics for summer math review for incoming graduate students
- Organized and assigned instructors for each class
- Prepared class notes for and taught classes in ordinary and partial differential equations, data analysis, numerical methods

OTHER SKILLS AND INTERESTS

Fluency in English, Mandarin Chinese, German; intermediate level of Russian
Experienced in Python (NumPy/SciPy/OpenCV/PyTorch/Pandas), SQL, R, LaTeX
PADI-certified Open Water Diver
President, MIT Badminton