Jeffrey Mei

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EDUCATION

Personal website

Massachusetts Institute of Technology, Cambridge, MA
Woods Hole Oceanographic Institution, Woods Hole, MA
Ph.D., MIT-WHOI Joint Program in Applied Ocean Science & Engineering, expected August 2020, GPA: 4.7/5.0
- Dissertation: "Morphological Approaches To Understanding Sea Ice Thickness"

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, Woods Hole, MA, 2015-present
- Applied convolutional neural networks to sea ice imagery to infer ice thickness from topography and interactively visualized the learned filters using OpenCV + PyTorch
- Collected sea ice thickness data using surface topography laser scans during 3-month winter fieldwork in Antarctica
- Created an interactive GUI for processing sea ice imagery (segmentation, floe delineation) using OpenCV
- Investigated sea ice thickness statistical distribution using extreme value theory
- Visualized and compiled satellite data interactively using Holoviews and Bokeh modules, as part of ICESat-2 Hack Week sponsored by the University of Washington (/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 and created 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.")

TEACHING AND LEADERSHIP EXPERIENCE

Elements of Modern Oceanography*,* MIT, Fall 2018
Teaching Assistant
- Explained physical oceanographic concepts to first-year graduate students, including some 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 incoming graduate students
- Prepared class notes (LaTeX) for and taught classes in ordinary and partial differential equations, data analysis, numerical methods

MIT Badminton Club, MIT, 2016-2020
Treasurer 2016-2019, President 2019-2020
- Managed club financials, including equipment ordering and fundraising
- Oversaw player registration, facilities reservations and liased with sponsors for the Boston Open (2nd-largest badminton tournament in the USA)

OTHER SKILLS

Fluent in English, Mandarin Chinese, German; intermediate level of Russian
Experienced with Python (NumPy/SciPy/OpenCV/PyTorch/Pandas), SQL, LaTeX, Linux
PADI-certified Open Water Diver