Mike H. Wu

Contact Information

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Education

Stanford University, Palo Alto, CA
Ph.D. Candidate in Computer Science, Expected 2022

Yale University, New Haven, CT
B.Sc. in Computer Science, 2016
- Distinction in Computer Science
- Yale College Council: Science and Engineering Committee

University of Oxford, Oxfordshire, Oxford
Visiting student in Computer Science, 2015
- Computer Science Mark: First
- Oxford Computing Society
- Oxford Engineering Society
- Coursework in machine learning and learning theory

Industry Experience

Facebook Research, Menlo Park, CA
Visiting Research Engineer, Dec 2016 - Jul 2017
Worked on Facebook's computer vision platform, Lumos. Lumos abstracts away domain knowledge about deep learning, allowing users new to the field to train complex image processing pipelines.

Lattice, Menlo Park, CA (lattice.io)
Software Engineer, Sep 2016 - Nov 2016
Worked on a natural language pipeline using DeepDive to convert unstructured text to a database of semantic relationships.

Invrea, Oxfordshire, Oxford (invrea.com)
Co-Founder, Jul 2015 - Aug 2016
A venture started with Frank Wood and Yura Perov. Invrea is a spreadsheet modeling tool with a probabilistic inference engine. Spreadsheets are computed as graphical models to make predictions and model uncertainty for the user.
- Featured in *Talking Machines* podcast.

Ionis Pharmaceuticals, Carlsbad, CA
Data Science Intern, May 2013 to Jul 2013
Built regression models trained on the ENCODE genome dataset to predict oligonucleotide drug-effectiveness from local genomic material.

Machine Learning

Mike Wu, Michael C. Hughes, Sonali Parbhoo, Finale Doshi-Velez. *Beyond Sparsity: Tree Regularization of Deep Models for Interpretability.* AAAI 2018.

Publications

NIPS 2017 TIML Workshop Oral Presentation.

Mike Wu, Jessi Cisewski. *Topological Hypothesis Tests for the Large-Scale Structure of the Universe.* JCGS 2017 (Under Review).

Marzyeh Ghassemi, Mike Wu, Michael C. Hughes, Finale Doshi-Velez. *Predicting intervention onset in the ICU with switching state space models.* AMIA Joint Summits 2017.
- Nominee for AMIA Clinical Informatics Research Award.

Mike Wu, Marzyeh Ghassemi, Finale Doshi-Velez, et.al. *Understanding vasopressor intervention and weaning: Risk prediction in a public heterogeneous clinical time series database.* JAMIA 2016.

Mike Wu, Yura Perov, Frank Wood, Hongseok Yang. *Spreadsheet Probabilistic Programming.* ArXiv 2015.

Mike Wu. *Financial Market Prediction.* ArXiv 2015.

Computer Vision Publications

Madhu Krishnan, Mike Wu, Young Kang, Sarah Lee. *Autonomous Mapping. and Navigation Through Utilization of Edge-Based Optical Flow and Time-to -Collision.* CISSE 2014.

Mike Wu, Madhu Krishnan. *Edge-based Crowd Detection from Single Image Datasets.* IJCSI 2013.

Selected Awards

NSF Graduate Research Fellow, 2017
- Value: $34,000.

Paul & Daisy Soros Fellowship Finalist, 2017

API World Hackathon, Telesign 1st Place Prize, 2017
https://github.com/mhw32/derm-ai
- Value: $5,000. Awarded to hack that diagnoses skin aberrations from natural images using residual networks.

Trueface.ai Hackathon 1st Place Prize, 2017
https://github.com/mhw32/face-to-emotion
- Awarded to hack that predicts emotion given natural images from webcam.

Qualcomm QLiving University Scholarship, 2014
- Value: $2,500. Awarded to 100 undergraduates based on academics.

XSEDE Best Student Poster, 2011
- *Position and Vector Detection of Blind Spot motion with Optical Flow*

HackMIT Top 8 Hacks, Dropbox API 1st Place, 2015

- Value: $5,000. Selected by judges for one of best 8 hacks in 36 hours.

Siemens Competition Semifinalist, 2012

Intel ISEF Finalist, 3rd place, 2011, 2012
- ACM, US Air Force, Sigma Xi, SDSC, Human Factors ISEF Awards

Teaching Experience

Yale School of Management, New Haven, CT
Teaching Assistant, Sep 2015 - Jan 2016
MGT656: Management of Software Development, Kyle Jensen

Yale Dept. of Computer Science, New Haven, CT
Teaching Assistant, Jan 2016 - May 2016
CPSC 437/537: Operating System Concepts, Avi Silberschatz

Outreach Experience

YHack, New Haven, CT (yhack.org)
Co-Founder, Jan 2014 - May 2016
Started an international Hackathon with over 4,000 applicants and 50 corporate sponsors each year intended to promote project-based learning for CS.

CodeBoola, New Haven, CT (codeboola.yhack.org)
Co-Founder, Jan 2015 - May 2016
A high school *learnathon* intended to teach high school students web programming and computational thinking. 300 annual participants.

Yale Technology Summit, New Haven, CT
Co-Organizer, Sep 2015 - Feb 2016
Helped Yale IT fundraise and plan logistics for a yearly technology conference.

Software Projects

Ada
https://github.com/mhw32/Adaware
A graph-based approach to extract semantically meaningful representation of multi-documents based on our NLP toolkit built on deep learning.

Penpal (penpallabs.com)
https://github.com/mhw32/Tremors
A stabilizing writing utensil specially designed to improve the lives of those with Essential Tremor, Parkinson's Disease, or other motion disorders.

RAMbrandt
https://github.com/mhw32/RAMbrandt
Pixel-level autoregressive generative model to learn a transition model to create modern art pieces trained on Pollock's and Legarde's work.

Software Tools

Python, R, VBA, MATLAB, Ruby, Lua, C, Clojure, Arduino
RoR, Node, Angular, Flask, HTML/CSS, Javascript, LaTeX
Autograd, PyTorch, Pyro, Theano, Keras, Numpy, Sklearn

References

Noah Goodman, Associate Professor, Department of Computer Science,
Stanford University. ngoodman@stanford.edu

Finale Doshi-Velez, Assistant Professor, Department of Computer Science,
Harvard University. finale@seas.harvard.edu

Frank Wood, Associate Professor, Department of Engineering,
University of Oxford. fwood@robots.ox.ac.uk

Jessi Cisewski, Assistant Professor, Department of Statistics,
Yale University. jessica.cisewski@yale.edu