Mike Wu

CONTACT INFORMATION

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EDUCATION

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

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

RESEARCH EXPERIENCE

Stanford University, Stanford, CA
Ermon Lab, Volodymyr Kuleshov, Nov 2016 - Present
- Research combining neural variational inference learning with Markov random fields (In Progress).

Harvard University, Cambridge, MA
Doshi-Velez Lab, Finale Doshi-Velez, Jul 2015 - Present
- Research building an autoregressive switching state model to learn unsupervised temporal patterns in ICU patient data (2015).
- Research combining recurrent neural networks and hidden Markov models to make a sparse, interpretable RNN (2016).

Yale University, Cambridge, MA
Cisewski Lab, Jessi Cisewski Sep 2015 - Jul 2016
- Research creating topological hypothesis tests for comparing the shapes of large-scale structures like the observable Universe.

University of Oxford, Oxfordshire, Oxford
Wood Lab, Frank Wood Jan 2015 - Jul 2015
- Research developing a probabilistic inference engine in a spreadsheet.

UCSD, San Diego, CA
Trivedi Lab, Brendan Morris Jun 2011 - Jun 2012
- Research using optical flow and Hough transforms for vehicle classification.

INDUSTRY EXPERIENCE

Facebook Research, Menlo Park, CA
Visiting Research Engineer, Dec 2016 - Present
Computer Vision Group w/ Nikhil Johri and Manohar Paluri

Lattice, Menlo Park, CA (lattice.io)
Software Engineer, Sep 2016 - Nov 2016
Externship developing NLP 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 I started with Yura Perov and Prof. Frank Wood for a native Excel modeling tool built on our inference engine.
- Featured in *Talking Machines* podcast.

Ionis Pharmaceuticals, Carlsbad, CA
Data Science Intern, May 2013 to Jul 2013
Worked with Chris Hart on an SVM to map oligonucleotide target sites to antisense drug success rates.

King George Mini Storage, King George, VA
Front-end Engineer Nov 2014 - Dec 2014
Developed a web application for advertising storage services.

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

Machine Learning Publications

Mike Wu, Viktoriya Krakovna, Michael Hughes, Finale Doshi-Velez. *Increasing the Interpretability of Recurrent Neural Networks Using Hidden Markov Models.* (In Preparation).

Mike Wu, Jessi Cisewski. *Topological Hypothesis Tests for the Large-Scale Structure of the Universe* JCGS 2016 (Under Review).

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

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

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

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, Theano, Torch, Keras, Tensorflow, Numpy, Sklearn

References

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