Michael W. Dusenberry

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EDUCATION

The Brody School of Medicine at East Carolina University, Greenville, NC
M.D. Candidate — Aug 2012 – May 2014
- Completed the first two years of the M.D. degree.

Appalachian State University, Boone, NC
B.S. Computer Science — Aug 2008 – May 2012
- Minor, Chemistry
- Summa cum laude (4.0 major, 3.98 cumulative)
- Outstanding Senior in Computer Science Award

EXPERIENCE

Google Brain, Mountain View, CA
Google AI Resident — Jun 2018 – Present
- AI Resident focused on research in deep learning and medicine.

IBM Spark Technology Center, San Francisco, CA
Machine Learning Advisory Software Engineer — Jul 2017 – Jun 2018
Machine Learning Software Engineer — May 2015 – Jul 2017
- Machine learning engineer focused on machine learning (ML) / deep learning (DL) mathematics, ML/DL research in the medical space, and distributed systems with Python, Scala, TensorFlow, Apache SystemML, and Apache Spark. Joined as part of the initial founding team, and helped build the center from the ground up. In July 2017, my responsibilities expanded to include an advisory role for other ML projects within the center, as well as the leadership of small teams.
- Deep Learning For Mitosis Detection and Tumor Proliferation Score Classification From Whole-Slide Histopathology Images of Breast Tumors (github.com/SparkTC/deep-histopath)
- SystemML-NN: A Deep Learning Library For Apache SystemML (github.com/dusenberrymw/systemml-nn)

The Brody School of Medicine at East Carolina University, Greenville, NC
Researcher, Department of Emergency Medicine — May 2013 – Feb 2017
- Student researcher building and evaluating the use of custom neural networks (Python, Octave/MATLAB) as a machine learning approach to predicting outcomes in complex clinical cases in the emergency department, under the guidance of Dr. Kori Brewer, Ph.D. and Dr. Charles Brown, M.D.
- Project started during the M1 summer session as part of the Brody School of Medicine "Summer Scholars Student Research Program".
- Presented posters at the Brody School of Medicine Medical Student Research Day (2013), and the North Carolina Medical Society Scientific Poster Conference (2013).
- Primary author on a paper published in the American Journal of Emergency Medicine (2016)

Appalachian State University, Boone, NC
Researcher, Department of Computer Science — Aug 2011 – Aug 2012
- Recruited from within the CS department, along with two graduate students, to form a research team for building and evaluating the use of online, automatically-grading software systems for use in CS classes.

PUBLICATIONS

Tran D, Dusenberry MW, van der Wilk M, Hafner D. Bayesian Layers: A Module for Neural Network Uncertainty. arXiv preprint arXiv:1812.03973. 2018 Dec 10. https://arxiv.org/abs/1812.03973

Dusenberry MW, Brown CK, Brewer KL. Artificial neural networks: Predicting head CT findings in elderly patients presenting with minor head injury after a fall. The American journal of emergency medicine. 2017 Feb 28; 35(2):260-7. http://dx.doi.org/10.1016/j.ajem.2016.10.065

Boehm M, Dusenberry MW, Eriksson D, Evfimievski AV, Manshadi FM, Pansare N, Reinwald B, Reiss FR, Sen P, Surve AC, Tatikonda S. SystemML: Declarative machine learning on spark. Proceedings of the VLDB Endowment. 2016 Sep 1; 9(13):1425-36. https://doi.org/10.14778/3007263.3007279

BLOG POSTS

Mixture Density Networks: mikedusenberry.com/mixture-density-networks

SKILLS

Languages: Python (current), {C, Scala, Java, Octave/MATLAB, Prolog} (previous)
Libraries: TensorFlow, NumPy, PyTorch, Apache SystemML, Apache Spark
Tools: Git, tmux, LaTeX