James A. Brofos

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EDUCATION

Dartmouth College — Hanover, New Hampshire

B.A., Mathematics and Computer Science (September 2011 - June 2015)

Relevant Coursework: Machine Learning · Deep Learning · Parallel Computing · Advanced Statistics · Mathematical Optimization · Advanced Econometrics

Cumulative GPA: 3.63 / 4.00

SKILLS AND QUALIFICATIONS

Programming Proficiency: Python, MATLAB, Objective-C, Java, C, and MPI
Operating Systems: Linux (Ubuntu), OS X, and iOS

PROFESSIONAL EXPERIENCE

The MITRE Corporation — Bedford, Massachusetts

Statistician (June 2015 - Present)

- Deployed Python survival analysis models and neural networks to forecast employee tenure for a US Government sponsor.
- Developed a novel machine learning algorithm that identified over $100M in anomalous payments by healthcare insurance providers.
- Developed a likelihood ratio test to enable efficient verification and accreditation of a digital radar target simulator for the US military.

Dartmouth College — Hanover, New Hampshire

Cluster System Administrator (February 2013 - May 2013)

- Built and configured a high-performance Linux environment in CentOS to meet the computational requirements of quantum research for the Physics Department.

ACADEMIC EXPERIENCE

- SHU, R., BROFOS, J., ZHANG, F., BUI, H., GHAVAMZADEH, M. and KOCHENDERFER, M. "Stochastic Video Prediction with Conditional Density Estimation." The 14th European Conference on Computer Vision (*ECCV*) Workshop on Action and Anticipation for Visual Learning, October 2016.
- BROFOS, J., SHU, R., and ZHANG, F. "The Optimistic Method for Model Estimation." The 15th International Symposium on Intelligent Data Analysis (*IDA*), October 2016.
- BROFOS, J., SHU, R., JIN, M., and DOWNS, M. "Leveraging Deep Neural Networks as Kernels for Survival Analysis." Neural Information Processing Systems (*NIPS*) Workshop on Machine Learning in Healthcare, December 2015.
- BROFOS, J., SHU, R. "Parallelization of Minimum Probability Flow on Binary Markov Random Fields." IEEE International Conference on Machine Learning and Applications (*ICMLA*), December 2015. Best poster award.

Mathematics Thesis (High Honors)

Developed a scalable and parallel algorithm for estimating the structure of Ising models. Proved bounds on the reconstruction error of the maximum likelihood estimator.

Computer Science Thesis (Honors)

Determined new probabilistic bounds for the communication complexity of distributed statistical estimation problems using information theory.