Michael McCourt

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Professional	Research Engineer/Head of Research
History	Visiting Assistant Professor

Lab Grad Associate

SigOpt, Inc. 2015 - present
University of Colorado, Denver 2013 - 2015
Argonne National Laboratory 2010 - 2013

Current Tasks and Expectations

Research - Develop and maintain a research presence in the ML community to understand/implement the state-of-the-art in our services, start research collaborations, and grow our hiring pipeline.

Engineering - Design and deploy software for Bayesian active learning; monitor performance of online computational engine; coordinate services with platform engineering team.

Product - Develop profiles of data scientists and modelers across different industries to adapt academic research ideas to meet their needs.

Customer - Facilitate research team presence in customer success engagements; develop materials and provide support for sales interactions; present new research initiatives to customers.

Education

Ph. D./M. S. in Applied Mathematics
B. S. in Applied Mathematics

Cornell University 2013/2009
Illinois Institute of Technology 2007

Selected Articles, Books, Patents & Proceedings

Efficient rollout strategies for Bayesian optimization, D. Bindel, E. Lee, B. Cheng, M. McCourt, D. Eriksson, Proceedings of the Thirty-Sixth Conference on Uncertainty in Artificial Intelligence, ID-124, 2020.

Systems and methods for implementing an intelligent machine learning optimization platform for multiple tuning criteria, B. Cheng, O. Kim, M. McCourt, P. Hayes, S. Clark. Patent US10528891B1

Creating glasswing butterfly-inspired durable antifogging superomniphobic supertransmissive, superclear nanostructured glass through Bayesian learning and optimization, S. Haghanifar, M. McCourt, B. Cheng, J. Wuenschell, P. Ohodnicki, P. Leu, Materials Horizons, 6(8):1632-1642, 2019.

Practical Bayesian optimization in the presence of outliers, R. Martinez-Cantin, K. Tee, M. McCourt, Proceedings of the Twenty-First International Conference on Artificial Intelligence and Statistics, PMLR 84:1722-1731, 2018.

Stable likelihood computation for Gaussian random fields, M. McCourt, G. Fasshauer, Recent Applications of Harmonic Analysis to Function Spaces, Differential Equations, and Data Science, I. Pesenson, Q.T. Le Gia, A. Mayeli, H. Mhaskar, D.-X. Zhou, Eds., 917-943, 2017.

A strategy for ranking optimization methods using multiple criteria, I. Dewancker, M. McCourt, S. Clark, P. Hayes, A. Johnson, G. Ke, JMLR Workshop and Conference Proceedings, 64:11-20, 2016.

Kernel-based Approximation Methods Using Matlab, G. Fasshauer, M. McCourt, World Scientific Press, 2015. ISBN: 978-981-4630-14-6

Open Source Projects

Open Source GaussQR - Matlab library for stably computing with kernel methods (part of textbook)

QMCPy - Python library for providing and developing Quasi-Monte Carlo methods

<u>PrefOpt</u> - Python library for conducting optimization of most-preferred (non-numeric) metrics