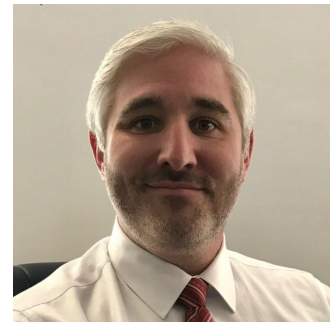


# Michael McCourt

SigOpt  
100 Bush St, Suite 1100  
San Francisco, CA 94131  
Telephone: 216.409.4644  
Email: [mccourt@sigopt.com](mailto:mccourt@sigopt.com)  
Web: <https://mikemccourt.github.io/>  
Github: <https://github.com/mikemccourt/>



- |                                   |  |                                  |                |
|-----------------------------------|--|----------------------------------|----------------|
| <b>Education</b>                  | <i>Doctor of Philosophy</i>  | Cornell University               | 2013           |
|                                   | <i>Master of Science</i>   | Cornell University               | 2009           |
|                                   | <i>Bachelor of Science</i>   | Illinois Institute of Technology | 2007           |
| <b>Professional History</b>       | <i>Head of Research</i>  | SigOpt, Inc.                     | 2015 - present |
|                                   | <i>Visiting Assistant Professor</i>  | University of Colorado, Denver   | 2013 - 2015    |
|                                   | <i>Lab Grad Associate</i>  | Argonne National Laboratory      | 2010 - 2013    |
| <b>Books &amp; Chapters</b>       | <i>Stable likelihood computation for Gaussian random fields</i> , 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.                         |                                  |                |
|                                   | <i>Kernel-based Approximation Methods Using Matlab</i> , G. Fasshauer, M. McCourt, World Scientific Press, 2015. ISBN: 978-981-4630-14-6   |                                  |                |
| <b>Articles &amp; Proceedings</b> | <i>Discovering near-perfect broadband and broad angle antireflection surfaces for optoelectronics by machine learning</i> , S. Haghanifar, M. McCourt, B. Cheng, J. Wuenschell, P. Ohodnicki, P. Leu, <i>Optica</i> , 7 (7), 784-789, 2020.  |                                  |                |
|                                   | <i>Practical Bayesian optimization over sets</i> , J. Kim, M. McCourt, T. You, S. Kim, S. Choi, 2020. Submitted  |                                  |                |
|                                   | <i>Efficient rollout strategies for Bayesian optimization</i> , D. Bindel, E. Lee, B. Cheng, M. McCourt, D. Eriksson, Proceedings of the Thirty-Sixth Conference on Uncertainty in Artificial Intelligence, ID-124, 2020.  |                                  |                |
|                                   | <i>On variable and random shape Gaussian interpolations</i> , S. Chiu, L. Ling, M. McCourt, <i>Applied Mathematics and Computation</i> , 377:125159, 2020.   |                                  |                |
|                                   | <i>Sampling humans for optimizing preferences in Coloring Artwork</i> , M. McCourt, I. Dewancker, ICML Workshop on Human in the Loop Learning, 2019.   |                                  |                |
|                                   | <i>Creating glasswing butterfly-inspired durable antifogging superomniphobic supertransmissive, superclear nanostructured glass through Bayesian learning and optimization</i> , S. Haghanifar, M. McCourt, B. Cheng, J. Wuenschell, P. Ohodnicki, P. Leu, <i>Materials Horizons</i> , 6(8):1632-1642, 2019. |                                  |                |
|                                   | <i>Practical Bayesian optimization in the presence of outliers</i> , R. Martinez-Cantin, K. Tee, M. McCourt, Proceedings of the Twenty-First International Conference on Artificial Intelligence and Statistics, PMLR 84:1722-1731, 2018.  |                                  |                |
|                                   | <i>An augmented MFS approach for brain activity reconstruction</i> , G. Ala, G. Fasshauer, E. Francomano, S. Ganci, M. McCourt, <i>Mathematics and Computers in Simulation</i> , 141:3-15, 2017.   |                                  |                |
|                                   | <i>A strategy for ranking optimization methods using multiple criteria</i> , I. Dewancker, M. McCourt, S. Clark, P. Hayes, A. Johnson, G. Ke, <i>JMLR Workshop and Conference Proceedings</i> , 64:11-20, 2016.  |                                  |                |
|                                   | <i>A meshfree solver for the MEG forward problem</i> , G. Ala, G. Fasshauer, E. Francomano, S. Ganci, M.   |                                  |                |

McCourt, IEEE Transactions on Magnetics, 51(3):1-4, 2015.

*The method of fundamental solutions in solving coupled boundary value problems for M/EEG*, G. Ala, G. Fasshauer, E. Francomano, S. Ganci, M. McCourt, SIAM Journal on Scientific Computing, 37(4):B570-B590, 2015.

*Sparse matrix-matrix products executed through colorings*, M. McCourt, B. Smith, H. Zhang, SIAM Journal on Matrix Analysis and Applications, 36(1):90-109, 2015.

*An introduction to the Hilbert-Schmidt SVD using iterated Brownian bridge kernels*, R. Cavoretto, G. Fasshauer, M. McCourt, Numerical Algorithms, 68(2):393-422, 2015.

*Multiphysics simulations: Challenges and opportunities*, D. Keyes et al, The International Journal of High Performance Computing Applications, 27(1), 4-83. 2013.

*Using Gaussian eigenfunctions to solve boundary value problems*, M. McCourt, Advances in Applied Mathematics and Mechanics, 5:569-594, 2013.

*Improving parallel scalability for edge plasma transport simulations with neutral gas species*, M. McCourt, T. D. Rognlien, H. Zhang, L. C. McInnes, Computational Science and Discovery, 5:014012, 2012.

*Stable evaluation of Gaussian RBF interpolants*, G. Fasshauer, M. McCourt, SIAM Journal on Scientific Computing, 34(2):A737-A762, 2012.

*Pseudorandom numbers for conformal measures*, M. Denker, J. Duan, M. McCourt, Dynamical Systems, 24(4):439-457, 2009.

*Spectral methods for resolving spike dynamics in the Gierer-Meinhardt model*, M. McCourt, N. Dovidio, M. Gilbert, Communications in Computational Physics, 3:659-678, 2008.

## Patents

*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.

- US10528891B1, 2020-01-07, Granted
- US10558934B1, 2020-02-11, Granted
- US20200097855A1, 2020-03-26, Pending
- US20200097856A1, 2020-03-26, Pending

*Systems and methods implementing an intelligent machine learning tuning system providing multiple tuned hyperparameter solutions*, K. Tee, M. McCourt, P. Hayes, S. Clark.

- US20190156229A1, 2019-05-23, Pending

*Systems and methods implementing an intelligent optimization platform*, P. Hayes, M. McCourt, A. Johnson, G. Ke, S. Clark.

- US10217061B2, 2019-02-26, Granted
- US10607159B2, 2020-03-31, Granted

*Systems and methods for an accelerated tuning of hyperparameters of a model using a machine learning-based tuning service*, M. McCourt, B. Hsu, P. Hayes, S. Clark.

- US20200019888A1, 2020-01-16, Pending

## Libraries

GaussQR - Matlab library for stably computing with kernel methods (part of textbook)  
<https://github.com/mikemccourt/gaussqr>

QMCPy - Python library for providing and developing Quasi-Monte Carlo methods  
<https://github.com/QMCSsoftware/QMCSsoftware>

PrefOpt - Python library for conducting optimization of most-preferred (non-numeric) metrics  
<https://github.com/prefopt/prefopt>