

Michael McCabe

EDUCATION

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University of Colorado Boulder

Ph.D. in Machine Learning and Scientific Computing, Advisor: Jed Brown

Boulder, CO

2019–Current

Northwestern University

B.A. in Economics and International Studies

Evanston, IL

2009–2013

GRE: 170 Verbal/169 Quantitative/5.5 Writing

COURSEWORK: Statistical Learning, Machine Learning, Theoretical Machine Learning, Deep Learning, Design and Analysis of Algorithms, Parallel Programming, Deterministic Optimization, Cvx Optimization, Online Cvx Optimization, Numerical PDEs, Computational Bayesian Statistics

AWARDS: Siemens Scholarship, Design Award for Engineering Design and Communication, Nominated for Guetzkow Prize for Outstanding Senior Research Paper in Int Studies, Siemens “You Answered” Recognition, Eccella “Eccellarator” Performance Award, Ayasdi “Flare” Performance Award

WORK EXPERIENCE

University of Colorado Boulder, Boulder, CO, *Research Assistant*

8/2019–Current

- Performs research at the intersection of Machine Learning and Scientific Computing. Current projects focus on (1) integrating prior knowledge in the form of ODEs/PDEs, conservation laws, and invariances into scientific deep learning methods to improve data efficiency and extrapolation capabilities and (2) developing improved optimization methods for scientific machine learning.

Ayasdi, Menlo Park, CA, *Data Scientist*

11/2016–7/2019

- Designed and implemented Machine Learning and Topological Data Analysis pipelines for healthcare, government, and financial services clients using both Ayasdi software and the scientific Python ecosystem.
- Collaborated with product and engineering teams in research and development capacity to develop new platform capabilities and prioritize candidate features for development.
- Developed an improved optimization framework for a non-convex unsupervised learning problem that exploited the structure of the problem to reduce run-time of a widely used software component to a quarter of the original execution time.

Eccella, New York, NY, *Senior Consultant*

2/2015–11/2016

- Architected large scale data integration projects involving 30+ heterogeneous systems and multiple business organizations from scoping through design, development, testing, and production support.
- Developed automation tools in Python and Java to integrate with enterprise ETL platforms in order to reduce development time on certain data flow mappings by approximately 80%.
- Led internal efforts to develop standards and education plan for transitioning employees into emerging Data Science consulting practice.

Siemens Healthcare, Malvern, PA, *Consultant*

7/2013–2/2015

- Implemented custom C# solutions to tailor software to specific customer needs, particularly with regard to Health Information Exchange integration and cross-enterprise secure messaging.
- Completed more than twenty projects as a lead consultant within first year including managing product betas at multiple hospitals working closely with engineering team to identify potential defects and enable clients to hit Meaningful Use metrics with minimal disruption of existing workflows.

TECHNICAL SKILLS

Languages: Python, SQL, C++, Java, Scala, Matlab

Frameworks: PyTorch, JAX, TensorFlow, SciPy Ecosystem, Spark

Databases: Oracle, MySQL, MS SQL Server, SQLite, Postgres, HDFS