Trevor Squires

PERSONAL DETAILS

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EDUCATION

BS in Mathematics, Minor in Computer Engineering, Clemson University (2014-2018)

MS in Mathematics, Clemson University (2018-2020)

PhD in Mathematics, Clemson University (2020-2022)

Relevant Coursework

- Data Structures and Algorithms
- Functional Analysis
- Numerical Linear Algebra
- Nonlinear Models for Big Data
- Deep Reinforcement Learning
- Machine Learning

SKILLS

Research Emphasis

My research is concentrated around the design and analysis of first-order convex optimization algorithms for large scale problems. In particular, I study parameter free methods, accelerated convergence techniques, universally applicable algorithms, and lower complexity bound analysis in the realm of first-order optimization.

Languages

Matlab, Python, VBA.

Soft Skills

Presented at multiple INFORMS annual conferencse; Gave machine learning talk at an Army Lab; Taught statistics at the undergraduate level.

RECENT EXPERIENCE

MOPTA Student, Summer Workshop in Optimization (2018)

In the summer of 2018 in a Machine Learning workshop at LeHigh University, I implemented convex optimization algorithms in PyTorch such as SGD, SVRG, SARAH, and SAGA. I also placed second in a ImageNet-like competition by utilizing residual networks to roughly double the size of my network.

NSF Intern, US Army Geospatial Lab (2019)

As an NSF intern at GRL, I developed land cover classification and atmospheric correction algorithms with the help of scikit-learn's sklearn python package. I designed multiple pretrained models for general purpose classification. My project was included in an internal library package and is a standard preprocessing tool for scientists at GRL.

Masters Work, Clemson University (2018-2020)

My masters was centered around theoretically unimprovable algorithms for solving binary logistic regression. It resulted in a paper which was recently accepted.

PhD Work, Clemson University (2020-Present)

During my time as a PhD candidate, I continued my study on first-order optimization algorithms for large scale machine learning problems. I designed multiple novel algorithms for solving common optimization models which have both practical and theoretical improvements to state-of-the-art methods. These works have been submitted for publication and are awaiting acceptance. One can view updated information on my website listed above.