ARIEL GOODWIN

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EDUCATION

Ph.D. Applied Mathematics 2022 - 2027 (Expected)
Cornell University, Center for Applied Mathematics

· Cornell Fellowship

B.Sc. Joint Honours Math and Computer Science 2018 - 2022
McGill University, Department of Mathematics

· Sir Edward Beatty Memorial Scholarship in Mathematics, Dr. Feng Qian Scholarship in Computer Science, Excellence Bursary in Computer Science, Seba Abbott Smith Entrance Scholarship, GPA: 3.98

WORK AND RESEARCH EXPERIENCE

NSERC Undergraduate Student Research Award Summer 2021
McGill University

· Supported by the Natural Sciences and Engineering Research Council of Canada (NSERC)
· Studied the maximum entropy on the mean method for regularizing ill-posed inverse problems
· Performed numerical experiments and computed proximal operators

NSERC Undergraduate Student Research Award Summer 2020
McGill University

· Studied theory and algorithms for efficiently computing projections onto the epigraphs of convex functions
· Performed numerical experiments, designed algorithms, and proved convergence results
· Wrote code to showcase different algorithms applied to a hierarchical classification problem

PUBLICATIONS AND PRESENTATIONS

Vaisbourd, Y., Choksi, R., Goodwin, A., Hoheisel, T., Schönlieb, C.-B. "Maximum Entropy on the Mean and the Cramér Rate Function in Statistical Estimation and Inverse Problems: Properties, Models, and Algorithms", submitted, November 2022.

Friedlander, M. P., Goodwin, A., and Hoheisel, T. "From perspective maps to epigraphical projections", *Mathematics of Operations Research*, October 2022

Nonsmooth Optimization Session (contributed talk), International Conference on Continuous Optimization (ICCOPT 2022), "The Maximum Entropy on the Mean Method for Linear Inverse Problems and Beyond", Lehigh University, Bethlehem, PA, July 2022

SKILLS AND INTERESTS

Programming Languages Julia, Python, C++, C, OCaml, Java, MATLAB
Technologies LaTeX, UNIX, Microsoft Office

· Knowledgeable about the theory and efficient implementation of algorithms and data structures
· Proficient in writing high-performance code for a variety of scientific and numerical applications
· Excellent oral and written communication skills
· Interested in optimization, probability, algorithm design, machine learning, quantitative analysis, finance, data science, and software development