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
· Contributed to the writing of a paper related to the project, to appear

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
· Contributed to the writing of a paper related to the project, see "Publications and Presentations"

PUBLICATIONS AND PRESENTATIONS

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

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

SKILLS AND INTERESTS

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

· Strong background in continuous optimization and convex analysis
· 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