# Laura Greenstreet

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## EDUCATION

2021 - Present **M.Sc. Computer Science**,
Cornell University

2017 - 2020 **B.Sc. Honours Computer Science, Mathematics Minor**,
2011 - 2012 University of British Columbia, GPA: 4.30/4.33

## RESEARCH EXPERIENCE

05/2020 - 08/2021 **Research Assistant**, Schiebinger Lab, Department of Mathematics, University of British Columbia

- Constructed developmental trajectories for biological systems in equilibrium using optimal transport on single-cell data
- Designed a manifold-learning approach for optics-free spatial transcriptomics

09/2019 - 09/2020 **Research Assistant**, WoRCS Lab, Institute for Resources, Environment, and Sustainability, University of British Columbia

- Assisted with a global assessment of the functional connectivity of protected areas
- Created acoustic permeability signatures to aid in the study of vocal amphibians

09/2019 - 05/2020 **Honours Thesis**, Algorithms Lab, Department of Computer Science, University of British Columbia

- Developed a continuous approximation to the classic learning problem of prediction with expert advice for a small numbers of experts

05/2019 - 08/2019 **Fellow - Data Science for Social Good Program**, University of British Columbia Data Science Institute

- Integrated six datasets and developed the database for an app helping city planners develop electric vehicle infrastructure
- Created a model to identify and rank charging sites, developing an objective that incorporates both potential usage and even access to chargers

## PUBLICATIONS

2021 Zhang, S., A. Afanassiev, **L. Greenstreet**, T. Matsumoto, G. Schiebinger. *Optimal transport analysis reveals trajectories in steady-state systems*. PLOS Computational Biology, 2021. https://doi.org/10.1371/journal.pcbi.1009466

2021 Shahan R., C. Hsu, T.M. Nolan, B.J. Cole, I.W. Taylor, **L. Greenstreet**, et al. *A single cell Arabidopsis root atlas reveals developmental trajectories in wild type and cell identity mutants*. Developmental Cell, 2021. https://doi.org/10.1016/j.devcel.2022.01.008

2020 Massri, A.J., **L. Greenstreet**, A. Afanassiev, A. Berrio Escobar, G.M. Wray, G. Schiebinger, D.R. McClay. *Developmental Single-cell transcriptomics in the* Lytechinus variegatus *Sea Urchin Embryo*. Development, 2020. https://doi.org/10.1242/dev.198614

## PRESENTATIONS

2020 **Greenstreet, L**, and E. Lai. *Developing a Data-Driven Electric Vehicle Strategy in Surrey, BC*. SigKDD 2020 Social Impact Session.

2020 **Greenstreet, L**, and E. Lai. *Maximizing Utilization of Electric Vehicle Charging Infrastructure in Surrey, BC using a Data-Driven Model*. UBC Multidisciplinary Undergraduate Research Conference.

## PREPRINTS

2022 **Greenstreet, L.**, A. Afanassiev, Y. Kijima, M. Heitz, S. Ichiguro, et al. *A DNA-based global positioning system—a theoretical framework for large-scale spatial genomics*. Preprint. https://www.biorxiv.org/content/10.1101/2022.03.22.485380v1

2021 Brennan, A., R. Naidoo, **L. Greenstreet**, Z. Mehrabi, N. Ramankutty, C. Kremen. *Functional Connectivity of the World's Protected Areas*. Preprint. https://doi.org/10.1101/2021.08.16.456503

2021 Hojun, L., J. Ezike, A. Afanassiev, **L. Greenstreet**, et al. *Hematopoiesis at single cell resolution spanning human development and maturation*. Preprint. https://www.biorxiv.org/content/10.1101/2021.08.25.457678v1

## AWARDS

2020 **NSERC Undergraduate Summer Research Award**

2018 **Stanley M Grant Scholarship in Mathematics**

## WORK EXPERIENCE

09/2022 - Present **Teaching Assistant**, Cornell University, Ithaca, NY
- CS 3220 FA22 - Computational Mathematics for Computer Science
- CS 4220 SP22 - Numerical Analysis: Linear and Nonlinear Problems

06/2021 - 12/2021 **Consultant**, Vancouver, BC
- Helped the City of Surrey migrate the app developed during my fellowship at UBC's Data Science Institute from RShiny to PowerBI for better integration with the City's systems.

01/2019 - 05/2019 **Academic Assistant**, University of British Columbia Library, Vancouver, BC
- Helped develop for-all-x, an open-source introductory logic textbook used in UBC's PHIL 220

07/2015 - 08/2017 **Information Technology Coordinator**, Tilth Alliance, Seattle, WA
- Led the integration of three non-profits' IT resources following a merger
- Maintained three websites and took the technical lead in the website redesign process

## COMMUNITY INVOLVEMENT

2022 **Volunteer**, Research Advocacy Day, Cornell

2020-2021 **Mentor,** Data Science for Social Good Program, UBC Data Science Institute

2019 **Math Tutor**, Emerging Indigenous Scholars Program, University of British Columbia

2014-2015 **Student Board Member**, SEED, Univ. of Washington Sustainability in Housing

2014-2015 **Volunteer**, University of Washington Student Farm