Laura Greenstreet

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EDUCATION

2021 - 2023 **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

2014 - 2015 **B.Sc. Undeclared**,
University of Washington, GPA: 3.9/4.0

RESEARCH EXPERIENCE

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

- Cellular Trajectory Reconstruction in Equilibrium Systems:
  - Extended an approach for reconstructing cellular trajectories from a time series of RNA-seq data to a snapshot of a steady-state systems using optimal transport.
  - Collaborated with biologists to apply the new approach to two real-world datasets, leading to biological insights.
- Spatial Transcriptomics:
  - Designed simulations to help experimentalists identify limiting factors in a novel spatial transcriptomics method for reconstructing cell positions in RNA-seq data without imaging.

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

- Global Connectivity Modelling:
  - Modeled the connectivity of protected area networks under several scenarios designed to meet conservation targets while minimizing caloric loss.
  - Ran continent-level analyses of connectivity, comparing the overlap of high connectivity-value areas to areas prioritized by existing conservation schemes.
- Ecoacoustics:
  - Designed acoustic permeability signatures for forested and agricultural landscapes to study correlations between the acoustic environment and the presence vocal amphibian species.

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

- Developed a continuous approximation to the classic learning problem of prediction with expert advice for a small numbers of experts.
- Ran numerical simulations in Python to gain empirical insights into the problem.

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

- Integrated six datasets and created a common spatial system.
- Designed an SQL database and integrated it into a visualization app for city planners.
- Created a model to identify and rank charging sites, developing an objective that incorporates both potential usage and even access to chargers for residents across the city.

Publications & Presentations

Computational Sustainability

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

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.

Bioinformatics

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 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

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.

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

Awards

2020 **NSERC Undergraduate Summer Research Award**

2018 **Stanley M Grant Scholarship in Mathematics**

2011 **President's Entrance Scholarship**

2011 **Governor General's Academic Medal - Bronze**

Skills

Languages Python, R, Matlab, Julia, SQL, Java

Technologies Relational Databases, Cluster Computing, HPC, Git, GIS, Linux, Latex

Work Experience

09/2020 - Present **Teaching Assistant**, Cornell University, Ithaca, NY

01/2019 - 05/2019 **Academic Assistant**, University of British Columbia Library, Vancouver, BC

07/2015 - 08/2017 **Information Technology Coordinator**, Tilth Alliance, Seattle, WA

Volunteer Experience

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

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

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

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

2011-2012 **Member**, Common Energy, University of British Columbia, Vancouver BC