

# Cassidy K. Buhler (she/her)

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in [cassie-buhler](#)

🐙 [cassiebuhler.github.io/](https://cassiebuhler.github.io/)

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## EDUCATION

**Ph.D. Operations & Business Analytics, Computational Data Science Minor**  
Drexel University

Philadelphia, PA  
09/2019 – 06/2024

**B.S. Mathematics, Statistics Emphasis**  
University of Utah

Salt Lake City, UT  
08/2015 – 05/2019

## EMPLOYMENT

### Doctoral Research Fellow

09/2019 – 06/2024

*Drexel University | Department of Decision Sciences & MIS*

- Led research projects applying optimization methods to machine learning and biodiversity conservation, resulting in 5 first-authored papers (2 published, 1 under review, 2 in preparation) and 8 conference presentations.
- Developed an open-source tool for spatial conservation planning using mixed-integer nonlinear programming, enhancing decision-making by selecting protected areas that minimize a species' predicted extinction risk
- Advanced unconstrained optimization by improving step direction calculations in nonlinear conjugate gradient methods, reducing iteration counts for large-scale machine learning problems.
- Instructed and assisted in 25+ undergraduate and graduate (MBA, Executive MBA, PhD) courses across various disciplines (statistics, business analytics, operations research, operations management, MIS); Earned 2 student-nominated teaching awards and course evaluation scores above department/college averages.

### Research Assistant

08/2018 – 08/2021

*University of Utah | Department of Mathematics*

- Collaborated on an interdisciplinary team in order to mathematically model the response of castration-resistant prostate cancer under various treatment regimens.
- Simulated biological dynamics as differential equations, formulating models with differing mechanism complexity.
- Evaluated modern treatment regimens under this scheme and first-authored a journal publication that disseminated findings to academic and medical audiences.

### Computer Scientist Intern

05/2018 – 08/2018

*United States Air Force | Hill Air Force Base*

- Conducted research related to improving software for USAF aircraft in the Software Engineering Group.
- Executed data analysis, cluster analysis, and data visualization in order to present and deliver insights to team leadership.

## SKILLS

### PROGRAMMING

Language	Libraries/Packages/Toolboxes
<b>PYTHON</b>	PyTorch   TensorFlow   Pandas   BeautifulSoup   scikit-learn   Keras   Seaborn   rasterio   Google Earth Engine
<b>R</b>	tidyverse   ggplot   rgdal   raster   rgeos   SDMTTools   deSolve
<b>MATLAB</b>	Deep Learning   Statistics & Machine Learning   Optimization   Financial   Computer Vision

### OPTIMIZATION SOFTWARE

Software	Applications
<b>GUROBI</b>	Quadratic Programming   Linear Programming
<b>Pyomo</b>	Mixed-Integer Nonlinear Programming   Derivative-Free Optimization
<b>CVX</b>	Convex Optimization
<b>CPLEX</b>	Integer Programming   Linear Programming
<b>AMPL</b>	Nonlinear Programming

### COURSEWORK

Subject	Courses
<b>Comp Sci</b>	Data Structures & Algorithms   Deep Learning   Artificial Intelligence   Machine Learning   Data Mining
<b>Data Science</b>	Data Acquisition & Pre-Processing   Data Analysis & Interpretation
<b>Statistics</b>	Statistical Inference   Multivariate Analysis   Time Series Analysis
<b>Applied Math</b>	Nonlinear Programming   Linear Programming   Stochastic Optimization   Math Econ   Game Theory