DEVON KOHLER
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EDUCATION

Northeastern University, *Boston, MA*
Khoury College of Computer Sciences
PhD in Computer Science Expected Graduation 2025

Northeastern University, *Boston, MA*
Khoury College of Computer Sciences GPA 4.0/4.0
Masters of Science in Data Science Dec 2020

Union College, Schenectady, NY
Bachelor of Arts in Economics, Minor in Political Science Jun 2013

TECHNICAL KNOWLEDGE

Programming Languages: Python, R, SQL, Julia, Matlab, GitHub
Machine Learning: Scikit-learn, Keras, PyTorch, Pyro, Omega
Database: Microsoft SQL Server, MySQL

RESEARCH EXPERIENCE

Graduate Research Assistant, **Northeastern University**, Boston, MA Apr 2020 - Present

- Developing causal machine learning and statistical analysis methods for proteomic research
- Modeled a biological signaling network using the probabilistic programming language Omega, allowing for conditioning on data, making interventions, and asking counterfactual queries
- Built the statistical analysis R tools MSstatsPTM and MSstatsLiP (available on Github and Bioconductor), which detect differentially abundant peptides collected via a variety of acquisition methods

PROFESSIONAL EXPERIENCE

Genentech, South San Francisco, CA May 2021 - Aug 2021
Bioinformatics Intern

- Implemented the R package MSstatsPTM in Genentech's internal workflow, building on their internal coding packages and creating a new GUI application
- Analyzed proteomic experiments for internal researchers, applying statistical inference and highlighting key results in interactive visualization tools
- Evaluated new statistical methods on simulated proteomic data to illustrate their effectiveness, showing they remove bias introduced by convoluting variables

The TJX Companies, Framingham, MA Jan 2020 - Mar 2020
Data Science Graduate Coop

- Implemented a machine learning model to predict online sales for the Sierra brand using Facebook's Prophet algorithm
- Designed an algorithm to model customer churn across TJX's websites, using each customer's purchasing history to create a unique CDF and marking them as churned when they reached an abnormally large time between purchases

Cybba Inc. (formerly VeInteractive), Boston, MA Nov 2015 – Oct 2019
Data Analyst

- Implemented data management process for deriving product's performance metrics, using SQL and Python, allowing both internal and external users to evaluate performance and gain insights

- Built multiple tools that were integral to the success of the business, including a machine learning algorithm to predict product performance and an AB testing process to demonstrate the impact of different products

PRESENTATIONS, PROCEEDINGS, AND PAPERS

Poster Presentation, ProbProg 2021 Oct 21

Kohler D; Zucker J; Tewari V; Sachs K; Ness R; Vitek O. Explorations of causal probabilistic programming approaches for rule-based models of biological signaling pathways

Poster Presentation, US HUPO 2021 Mar 21

Kohler D; Tsung-Heng T; Huang T; Verschueren E; Hinkle T; Choi M; Vitek O. MSstatsPTM: An R software for detecting quantitative changes in post-translational modifications.

TEACHING EXPERIENCE

Northeastern University, Boston, MA

Teaching Assistant, Statistical Inference in Computer Science Sep 2021 - Present

Teaching Assistant, Algorithms Sep 2019 - Dec 2019

- Assisted in running two PhD level classes, teaching course material, conducting office hours, and grading assignments

ASMS Fall workshop: R Fundamentals for Mass Spectrometry Data Analysis Nov 2020

Workshop Teaching Assistant

- Helped run a workshop for professional scientists interested in learning the basics of R, reviewing different techniques such as plotting with ggplot, data manipulation with dplyr, and statistical inference

CLASS PROJECTS

Causal Modeling, **Northeastern University**, Boston, MA Sep 2020 - Dev 2020

- Implemented a probabilistic programming model on a dynamic stochastic system, allowing for the evaluation of different interventions and counterfactuals

Statistical Methods for Computer Science, **Northeastern University**, Boston, MA Sep 2019 - Dec 2019

- Used a linear mixed effects model to assess the results of a study interested in the effects of different SQL visualizations on user comprehension

Supervised Machine Learning, **Northeastern University**, Boston, MA Jan 2019 - Apr 2019

- Created a dataset on healthcare, sorting through and joining multiple files from the CDC
- Tested a variety of classifiers, such as logistic regression, boosted trees and neural networks, to predict whether an individual has experienced heart disease

GITHUB REPOSITORIES

MSstatsPTM: https://github.com/devonjkohler/MSstatsPTM
MSstatsLiP: https://github.com/devonjkohler/MSstatsLiP
Causal Modeling Biological Signaling Pathway: https://github.com/devonjkohler/causal-prog-rule-models
Causal Modeling Class Project: https://github.com/devonjkohler/Causal_Inference_Project