

Xinyi Xie

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Research Interests	Statistical Learning, Operation Research, and keep exploring
Academic Background	<p><i>M.S. Statistics</i> 2022 Sep - 2024 April (Expected) University of Washington- Seattle, Seattle, WA</p> <ul style="list-style-type: none"> <input type="checkbox"/> Coursework Highlight: Introduction to Machine Learning, Statistical Inference <p><i>B.S. Honors Mathematics and Honors Statistics</i> 2019 Sep - 2022 April University of Michigan - Ann Arbor, Ann Arbor, MI</p> <ul style="list-style-type: none"> <input type="checkbox"/> GPA: 3.85/4 <input type="checkbox"/> Coursework Highlight: Multivariate Analysis, Manifold, Combinatorics, Functional Analysis*, Measure Theory*, Probability*, Numerical Linear Algebra*, Regression Analysis*, Data Science in Python* <input type="checkbox"/> Graduate with a completion of Honor Thesis is Statistics and awarded in High Honors by Statistics Department
Research Experience	<p>Joint Dimensionality Reduction for Microbiome Data 2022 June - Present <i>Supervised by Professor Jing Ma</i> University of Washington, Seattle, WA</p> <ul style="list-style-type: none"> <input type="checkbox"/> Implemented integrative Generalized Principal Component Analysis Model (ig-PCA) by Python <input type="checkbox"/> Conducted Simulations on igPCA, and it reached a higher accuracy in prediction of principle scores and in recovery of original matrix than PCA and JIVE <input type="checkbox"/> Implemented two Generalized Bi-Cross Validation Methods in rank selection Python, and achieved a high accuracy in determining the true rank in simulation studies <p>Microbiome Classification 2021 Jan - 2022 Apr <i>Supervised by Professor Ji Zhu</i> University of Michigan, Ann Arbor, MI</p> <ul style="list-style-type: none"> <input type="checkbox"/> Proposed a Penalized Log-Contrast transformed Logistic Regression Model in classifying the composition microbiome data <input type="checkbox"/> Applied Accelerated Proximal Gradient Descent in solving the model <input type="checkbox"/> Implemented the proposed method Python, and reached a higher accuracy in predicting the regression parameters than base line models in simulation studies <input type="checkbox"/> Reached a higher accuracy detecting the non-zero regression parameters in sparse scenarios than base line models in simulation studies <input type="checkbox"/> Wrote the Honors Thesis in the proposed methods, and rewarded as high distinction
Teaching Responsibilities	<p>Teaching Assistant 2021 Jan - 2021 Apr, 2022 Jan - 2022 Apr <i>MATH217: Linear Algebra</i> Mathematics Department, University of Michigan</p> <ul style="list-style-type: none"> <input type="checkbox"/> Organized regular office hour sections to help students gain a deeper understanding of course materials and proof-writing skills <input type="checkbox"/> Held one-to-one peer tutorial sections to help students with homework and exams

Skills

- Programming Language** Python, C++, R
- Platforms** Scikit, Pytorch, TensorFlow, Matplotlib, Pandas, SQL
- Tools** LaTeX, Photoshop