

# Susan L. Hoops

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## EDUCATION

**Doctor of Philosophy, Computer Science** (GPA 4.00)

**Expected 2024**

**Master of Science, Computer Science** (GPA 4.00)

**Feb 2023**

*University of Minnesota-Twin Cities*

*Minneapolis, MN*

**Bachelor of Arts, Mathematics** (GPA 3.57)

**May 2017**

*St. Olaf College*

*Northfield, MN*

## WORK EXPERIENCE

**Graduate Researcher**

**Sep 2020 - Present**

*University of Minnesota-Twin Cities | Advised by Dr. Dan Knights*

*Minneapolis, MN*

- Directed data analysis (Python, R) and data management (SQL, Linux, HPC) for several large, published studies.
- Created a machine learning pipeline with 12% improved performance tracking bacteria in microbial transfer therapy.
- Corrected dimensionality reduction anomalies in multivariate datasets, improving model accuracy by 28%.
- Advised 7 researchers and assisted in teaching courses covering machine learning, Python, and genomics.

**Data Scientist**

**Sep 2018 - Aug 2020**

*University of Minnesota-Twin Cities | Computer Science & Engineering*

*Minneapolis, MN*

- Developed statistical workflows in Python and R for disseminating gut microbiome findings in longitudinal studies.
- Collaborated with interdisciplinary teams of domain experts, statisticians, researchers, and project managers.

**Fulbrighter**

**Sep 2017 - June 2018**

*Fulbright U.S. Program | Advised by Dr. Marc Streit*

*Linz, Austria*

- Visualized GitHub version control system as a graph using Python and D3.js to represent computational optimization.
- Taught English in a local secondary school and completed courses for the Technical Mathematics M.S. at JKU Linz.

**Data Science Intern**

**May 2017 - Aug 2017**

*CoreBiome | Diversigen*

*Saint Paul, MN*

- Automated custom microbiome analysis (Python, D3.js) for clients on AWS using the EC2 cloud and S3 storage.

## SKILLS

**Programming:** Python, R, SQL, C++, GitHub, Linux, MATLAB, LaTeX, D3.js, HTML, CSS

**Data Handling:** AWS storage (S3), AWS computing (EC2), Relational databases (RedCAP), HPC clusters, cloud computing

**Data Analysis:** Hypothesis testing, Machine Learning, Bayesian statistics, AI, Deep Learning (PyTorch, TensorFlow, SciKit)

**Languages:** English (native), German (conversational), American Sign Language (beginner)

## LEADERSHIP & OUTREACH

**Board Member, Fulbright Association of Minnesota**

**July 2019 - July 2022**

**Director of Finance, Council of Graduate Students, University of Minnesota-Twin Cities**

**July 2020 - July 2021**

**President, Habitat for Humanity, St. Olaf College**

**Sep 2015 - May 2017**

**Captain, Women's Cross Country and Track & Field, St. Olaf College**

**Sep 2015 - May 2017**

## AWARDS

Honorable Mention, *NSF Graduate Research Fellowship Program* (2021)

Fulbright Combined Award, *Fulbright Association* (2017)

Program Director of the Year, *St. Olaf College Leadership Awards* (2016)