Sydney Eriksson

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Education

Hamilton College — Clinton, NY

Bachelor of Arts in Mathematics and Computer Science — *Expected May 2025*

- **GPA:** 3.66
- **Relevant Coursework:** Intro to Computer Science, Computer Science Design Principles, Algorithms and Data Structures, App Development, Principles of Programming Languages, Computer Networks, Computer Organization, Algorithms, Machine Learning, Statistical Modeling and Applications, Discrete Probability and Simulation, Calculus I to III, Linear Algebra, Differential Equations, Real Analysis, Modern Algebra, Dynamics, Knot Theory.
- **Technical Skills:** Python, C++, R, Linux, JavaScript, React Native, Ruby, Clojure, Haskell, Prolog, LaTeX, Git, VS Code

Relevant Experience & Projects

Explore BIGG Data REEU, UT Knoxville — Fire Ant Genomics — Knoxville, TN

Intern — *June 2024 - August 2024*

Project: Using a hybrid zone to better understand the maintenance of species boundaries in invasive fire ants.

- Utilized tools such as a STRUCTURE plot, FST heatmap, and PCA plot to verify the genomic background of hybrid fire-ants
- Used a genomic cline analysis to locate impeded and adaptive loci in the fire-ant genome
- Identified areas of high linkage in chromosomes corresponding to impeded loci using an LD heatmap
- Presented a poster on how the emergence of a hybrid zone provides unique insight into the maintenance of species boundaries in invasive fire ants

Language Learning Web Application — Madison, WI

Personal Project — *August 2024 - September 2024*

Achievement: Developed a useful app for language learning that incorporates important software frameworks and libraries (Flask, React) in combination with machine learning methods.

- Developed a front-end web application in React of a bookshelf filled with Gutenberg Library books of a specified language and proficiency level
- Developed a Flask back-end which processes data from OpenAI's ChatGPT to translate books and adjust the reading level to the user
- Added additional features to the app which allow users to click on individual words to translate them and review later as flash cards

Dawson Lab, Department of Horticulture, UW-Madison — Madison, WI

Data Analyst — *May 2023 - August 2023*

- Independently developed regular expressions for seed patent analysis
- Debugged legacy R code for organic farming ANOVA analysis
- Learned about organic farming research through visiting farms and reading papers
- Maintained fields through fence building, weeding, and watering
- Took data measurements of Botrytis fungal spots on tomato leaves

CIMAT J-Term Program — Guanajuato, MX

Student — *January 2023*

- Completed and received a grade of A in a graduate level course on discrete probability and simulation
- Worked collaboratively on a team to model and predict changing levels of pollution in Mexico City using Markov Chains and R code

Vitruvian Farms — Madison, WI

Crew Member — *May 2022 - August 2022*

- Provided a unique farm experience for worker shares
- Trained worker shares and delegated tasks effectively to maintain a high morale
- Worked on all aspects of farming: weeding, harvesting, washing and packaging vegetables in all weather conditions
- Independently operated multiple pieces of machinery simultaneously in a fast-paced process

Leadership Experience

Hamilton Club Nordic Ski Team

Ski Team Captain / President *August 2022 - Present*

- Manages a budget in cooperation with the athletic director
- Organizes practices and teaches safety and skiing techniques to new participants
- Sets up race schedule and registers participants
- Responsible for scheduling transportation and driving jitney to events
- Plans recruitment events and team bonding

Hamilton Club Rugby Football Team

Rugby Treasurer / President *August 2022 - December 2023*

- Proposed and negotiated a budget for the team in partnership with athletic director
- Taught players how to tackle safely and effectively make plays
- Maintained a high team morale
- Provided sustenance for early morning races