

# Rachael Close

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## EDUCATION

Cornell University, College of Engineering, Ithaca NY

Bachelor of Science Expected May 2025

Major: Computer Science • Dean's List

*Selected Coursework:* Analysis of Algorithms • Operating Systems • Computer System Organization and Programming • Data Science • Functional Programming • Object-Oriented Programming and Data Structures • Discrete Structures • Computer Vision • Machine Learning • Probability

## TECHNICAL EXPERIENCE

H2Ok Innovations (Software Engineer)

May 2024-Aug 2024

- Build company website using React, JavaScript, CSS, and HTML, give and receive feedback during weekly meetings, maintain code using Git.
- Develop and maintain machine learning scripts for data analysis and predictive modeling.

Cyber-Agricultural Intelligence and Robotics Laboratory (Software Engineer)

Jun 2023-Aug 2023

- Develop a computer vision model to automate the process of separating callus cells with a robot arm, fine-tuning Segment Anything for the model and writing scripts in raspberry pi to take photos, showcased in a poster presentation.
- Build a 3-D reconstruction of the callus cells using neural radiance fields (NERF).
- Participated in weekly paper presentations and led NERF journal reading group.

Cornell University Autoboat Project Team (Software Engineer)

Sep 2022-May 2023

- Implemented Python for path planning algorithms and YOLOv5m model training for buoy recognition.
- Finalist in RoboNation competition (2023).

Cornell Ann S. Bowers College of CIS (Robotics Research Intern)

Jun 2023-Aug 2023

- Implemented ROS and SLAM for 2D mapping system development and optimization track for a MuSHR race car.
- Investigated open-ended vision problems under the mentorship of Professor Sarah Dean.

## PROJECTS

Movie Genre Predictor, AI Praq

Jan 2024-Jun 2024

- Develop machine learning models to predict movie genres based on movie titles. Utilized Python and various machine learning libraries.

Terminal Chess Game, Functional Programming

Aug 2022-Dec 2022

- Collaborated in a team of four to design and implement a fully functional terminal chess game using OCaml.
- Key contributions include coding various game functions, implementing continuous integration and deployment practices using GitHub Actions.

## SKILLS

• **Programming languages:** C/C++, Python, Java, JavaScript, OCaml, HTML5, CSS, PHP, Ruby, Unix, MySQL, Clojure, Scala, Swift

• **Libraries:** Bootstrap, React, Foundation, Pure.css, Tailwind, UIKit, MVP.css, Lodash, Luxon, Redux, Axios, Jest,

• **Developer Tools and Frameworks:** Git, Linux Environments, Agile Methodology, Postman, Docker, PyTorch, ROS, MS Excel, MS Word, MS PowerPoint, Kivy, Conda, VS Code, Apple XCode, Eclipse, Atom, Vim, Nano

## KEY LEADERSHIP EXPERIENCE

Teaching Assistant CS 2800 (*Discrete Structures*), CS 3110 (*Functional Programming*)

Jan 2023- present

- Lead a class of 20+ students every week. Collaborate and coordinate with fellow teaching assistants in grading homework & exams.

Girls Who Code Instructor

Jan 2024- present

- Lead a class of 30+ students aged 10-14 in exploring the fundamentals of computer science and coding. Design engaging and interactive lessons.

## PUBLICATIONS AND AWARDS

• Acheta J, Bhatia U, Jeanette H, Hong J, Rich K, **Close R**, Bechler ME, Belin S, Poitelon Y. Piezo channels contribute to the regulation of myelination in Schwann cells. *Glia* 2022 Dec;70(12):2276-2289.

• Clare Booth Luce Research Scholar (\$6,000 summer research 2023)

• Kessler Fellow (\$15,000 summer 2024 start-up grant)

• Grace Hopper 2023 Conference \$1500 Scholarship Recipient issued by Cornell University