CRISTA FALK

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EDUCATION

- **Tufts Graduate School of Arts and Sciences,** Medford, MA — *Sept 2023 - ongoing*
  Doctorate of Philosophy in Psychology/Cognitive Science
  GPA: 4.0 out of 4.0
- **Massachusetts Institute of Technology,** Cambridge, MA — *Sept 2019 - June 2023*
  Bachelor of Science, Computation and Cognition
  GPA 4.8 out of 5.0
- **Lake City High School,** Coeur d'Alene, ID — *Sept 2014 - June 2019*
  High School Diploma
  GPA 4.5 out of 4.0

RELEVANT GRADUATE COURSEWORK

- Advanced Statistics I, II
- Cognitive Psychology Core
- Neuroscience Core
- Models of Perception and Cognition
- Philosophy of Cognitive Science
- Reinforcement Learning
- Probabilistic Systems Analysis
- The Predictive Mind
- Computational Models of Cognitive Science

HONORS

- Tufts Graduate Research Symposium 1st place in the 3-Minute category | 2025
- Tufts "3 Minute Thesis" Competition "People's Choice" Award | 2024.
- MIT Walle Nauta Award for Excellence in Undergraduate Teaching | 2023.
- MIT STEMVAULT Video Competition Finalist | 2023.
- MIT Brain and Cognitive Sciences Undergraduate Research Award | 2022.
- MIT Burchard Scholars Award | 2022.
- Questbridge Scholarship | 2019.

GRANTS, FELLOWSHIPS, COMPETITIVE PROGRAMS

- Tufts Graduate Research Excellence at Tufts (GREAT) program | 2025.
- Jeffrey Stibel Cognitive Science Graduate Student Fellowship | 2024, 2025.
- National Science Foundation: Graduate Research Fellowships Program (not awarded).
  - Project Title: *Can Postural Statistics Predict Proprioceptive Bias in the Limbs?*
- Tufts Graduate Student Research Competition Funding Recipient | 2023.

RESEARCH EXPERIENCE

Multisensory Perception Lab - Tufts University Psychology Department
Graduate Research Assistant, Fall 2023 - ongoing
Advisor: Stephanie Badde

- Developed a custom apparatus for masking kinesthetic noise in hand proprioception tasks.
- Recruited and ran participants in psychophysical experiments.
- Analyzed data and communicated findings regarding ongoing Masters thesis research.

Machine Learning Project Group - KIT ETP
International Research Student, Summer 2022
Advisors: Lars Sowa, Roger Wolf

- Global learning opportunity through the MISTI Germany program.
- Project centered around analyzing what occurs behind the scenes of a neural network.
- Through methods such as Taylor Coefficient Analysis, I trained and investigated a discrimination model for interneurons and pyramidal neurons based on the firing rate behavior of cells in behaving rats.

Seethapathi Motor Control Lab - MIT Brain and Cognitive Sciences (BCS)
Undergraduate Research Assistant, January 2022 - May 2023
Advisor: Nidhi Seethapathi

- Using data from an existing infant study [1], my project sought to recontextualize infant locomotive behavior in terms of continuous trajectory rather than purely area explored.
- Tested the efficiency of using Deep Lab Cut for future infant locomotion experiments.
- Simulated a model of Optimal Foraging Theory to generate a descriptive model of infant exploration.
- The ultimate goal was to determine whether such a model might reveal a reward-based objective function and elucidate new understanding about why babies explore.

[1] Hoch, J. E., O'Grady, S. M., & Adolph, K. E. (2019). It's the journey, not the destination: Locomotor exploration in infants.

Human-Computer Interaction - MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Undergraduate Research Assistant, October - December 2021
Advisor: Rob Miller

- Praxis project explored ways to use software for measurement, analysis, and visualization of skill-building in a variety of domains of human activity, particularly domains that have no tradition of practicing, or where human coaches are scarce or nonexistent.
- Aided in the development of this project in the domain of musicianship (oboe)
- Drew upon my past experience and formalized a concept for software that enables independent, unguided instrument skill development.
- Leveraged technical skills in software engineering, machine learning, and web programming to produce an implementation plan and collected many audio recordings of my own practice to allow for a future prototyped version of this tool.

LEADERSHIP, SERVICE, OUTREACH

Tufts Student Accessibility and Academic Resources (StAAR) Center

Graduate Writing Fellow, Fall 2024 - ongoing

- Met with undergraduates, graduates, and alumni to consult about writing needs.
- Worked with ESL, incarcerated, and nontraditional students to improve verbal and written communication skills.
- Assisted students with written coursework, thesis papers, and postbac applications.
- Maintained a minimum of six, hour-long appointments each week.

Tufts Psychology Department Executive Committee

Committee Member, Fall 2024 - Spring 2025

- Acted as point-person across all department committees, fostering inter-committee communication and support if need be.
- Served as liaison between graduate students and faculty to express concerns and suggestions as they come, outside of existing institutional avenues.

Girlstart Afterschool Education Program

STEM CREW Instructor - Spring 2024

- Prepared and taught weekly hands-on experiments on various STEM subjects.
- Supervised the learning of twelve 4th and 5th grade girls at Healy Elementary.
- Connected each experiment to a potential future career and highlighted an inspiring woman in that STEM field.

MIT Office of Experiential Learning (OEL)

Senior Experiential Learning Ambassador, May 2022 - June 2023

- Planned and ran events to help students learn about opportunities on campus for research, study abroad, public service, entrepreneurship, and project development.
- Promoted experiential learning opportunities (ELOs) and resources such as the experiential learning exchange (ELx) website through social media, emails, and publicizing on campus.
- Hosted office hours to meet with students, review their applications and resumes, and provide resources to help them prepare for interviews and future ELOs.
- Acted as a student voice for upcoming Office of Experiential Learning initiatives.
- Suggested idea for subsidized coffee chats initiatives to facilitate student mentorship.

First-generation and/or Low Income (FLI) Organization @ MIT

Publicity Officer, September 2020 - May 2021

- Created promotional materials to publicize upcoming events.
- Sent emails regarding upcoming gatherings and resources.

Executive Director, September 2021- June 2023

- Responsible for overseeing the wide-scale operations of FLI@MIT, advocating on behalf of FLI identities on campus, and working to improve FLI visibility and support at MIT.

- Frequently interfaced with the MIT Office of the First Year and First Generation Program to meet the needs of first generation and/or low-income students on campus (organizing social events, professional development workshops, alumni talks, and other forms of outreach).
- Led weekly executive meetings and delegate responsibilities among FLI@MIT committee leaders to carry out our initiatives.

TEACHING EXPERIENCE

Tufts University Graduate TAships:

PSY 031 Statistics for the Behavioral Sciences - Spring 2025

- Prepared and taught weekly stats labs using Excel and jamovi software.
- Graded lab assignments concerning statistical tests and reasoning.
- Held weekly office hours.

PSY 025 Physiological Psychology - Fall 2024

- Attended weekly lectures to support student questions.
- Graded student discussion posts and quiz essay responses.
- Ran bi-weekly office hours.

PSY 027 Perception - Fall 2023

- Moderated zoom for students joining class virtually.
- Acted as a resource for professor and students.
- Graded weekly forum posts.
- Ran bi-weekly office hours.

Tufts Summer Accelerator Program

Course Instructor, Summer 2024 | Tufts University

- Developed curriculum for eight two-hour long classes on the topic of Cognitive Science at an early college skill-level.
- Created engaging lecture slides and daily assignments.
- Taught daily lessons and led office hours.

Machine Learning Academy: Coding Deep Neural Networks

Instructor, Summer 2023 | iDTech Academy MIT Campus

- Acted as an instructor for six, two-week sessions covering topics such as dense NNs, CNNs, Recurrent NNs, and more.
- Taught 7 hour daily lessons to classes of up to 20 students ages 14-18.
- Advised on self-guided final projects which applied concepts from the course to students' interests.
- Supervised overnight campers during non-class hours and field trips around the Boston area.

9.00 Introduction to Psychological Science

Course TA, Spring 2022 and 2023 | MIT Brain and Cognitive Sciences (BCS)

- Introduced students to topics in psychology: including memory, intelligence, development, mental health, social psychology, and many more.

- Ran a weekly recitation session to cover concepts from lecture and textbook readings
- Other responsibilities included: formulating quiz questions, providing feedback on students' essays, grading assignments, preparing slides to review materials, overseeing office hours, and meeting with the other TAs to coordinate course logistics.

TECHNICAL SKILLS AND PROGRAMMING LANGUAGES

- Primary Use: Python (Numpy, Matlibplot, PsychoPy), R, Arduino/C++, Git, Bash, LaTex
- Competency: Matlab, Java, Javascript, React, HTML/CSS, Reaper, MaxMSP, Music21

LANGUAGES

- English (fluent, native)
- French (rudimentary)
- German (rudimentary)