

Alisha Bevins

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Education

University of Nebraska-Lincoln

Doctor of Philosophy Student in Computer Science

Expected August 2025

Advisor: Dr. Brittany Duncan

University of Nebraska-Lincoln

Master of Science in Computer Science

August 2021

Advisor: Dr. Brittany Duncan

Thesis topic: Aerial Flight Paths for Communication in small Unmanned Aerial Vehicles (UAV)

University of Nebraska-Lincoln

Bachelor of Science in Mechanical Engineering

May 2019

Minors: Robotics & Computer Science

Teaching

Course Instructor: Human-Computer Interaction

Lincoln, NE

University of Nebraska-Lincoln

Fall 2022, Fall 2023, Fall 2024

- Delivered a course on Human-Computer Interaction (HCI) within the School of Computing to 66 (2022), 99 (2023), and 75 (2024) students, focused towards Software Engineering and Computer Science majors.
- Incorporated real-world examples to illustrate practical applications in interface design, usability evaluation, and user experience design.
- Utilized diverse teaching methodologies such as: lectures, group discussions to foster a collaborative learning environment, and hands-on projects to engage students and facilitate deeper understanding of HCI practices.
- Updated course materials, including lecture slides and small group activities.
- Guided students through small group projects, providing feedback through the design and iteration process.
- Managed graduate and undergraduate teaching assistants, overseeing their responsibilities.

Research

University of Nebraska-Lincoln, NIMBUS Lab

Lincoln, NE

Graduate Research Assistant

May 2019 - PRESENT

Undergraduate Research Assistant

January 2016 - May 2019

Research Focus: Human-Robot Interaction

Projects

Aerial Flight Paths for Communication

- Conceptualized, designed, and implemented research studies to understand how people react to different UAV flight paths and the effect of the context of a situation.
- Designed research surveys, programmed and recorded live UAV flight paths, wrote comprehensive IRB proposals, recruited participants both in-person and on Amazon's Mechanical Turk, applied statistical analysis techniques, and wrote published conference and journal papers.

STEM CONNECT Scholarship Program

- Explored the impact of introductory Computer Science curriculum development on first year and transfer students.
- Co-planned and operated a multi-day retreat for state-wide university and community college faculty within Mathematics and Computer Science departments. This retreat helped to further develop partnerships and create articulation agreements.
- Provided Computer Science support and tutoring for students receiving the STEM CONNECT scholarship at UNL, which supports students in the STEM field with financial need that come from under-represented communities.

Cultural Acceptance of Robots in the K-8 Classroom

- Ran a project that aimed to understand levels of acceptance of robots in American K-8 classrooms.
- Discovered the research gap, wrote an accepted proposal to fund undergraduate research (UCARE Program), wrote an IRB proposal, created research surveys, engaged with education stakeholders and teachers, recruited 392 students and 236 parents for participation.

UAV Soil Sample Collection & Sensor Emplacement

- Supported the development of two systems that attach onto a UAV system: one that collected soil to provide soil composition information to farmers, and one that placed a sensor in the ground for the Department of Defense.
- Aided in system part generation, from CAD modeling to 3D printing and system integration.

Human Comfort Levels with a Small UAV and Telepresence Robot

- Supported a project to assess how comfortable participants felt with ground and aerial robots.
- Assisted in setting up the study, running participants, and analyzing the qualitative results.

Publications

Bevins, A., Kunde, S., & Duncan, B. A. (2024, March). User-Designed Human-UAV Interaction in a Social Indoor Environment. In *Proceedings of the 2024 ACM/IEEE International Conference on Human-Robot Interaction* (pp. 23-31). <https://doi.org/10.1145/3610977.3634960>

Bevins, A., & Duncan, B. A. (2021, Dec). Aerial flight paths for communication. In *Frontiers in Robotics and AI*, 8, 719154. <http://doi.org/10.3389/frobt.2021.719154>

Bevins, A., & Duncan, B. A. (2021, March). Aerial flight paths for communication: How participants perceive and intend to respond to drone movements. In *Proceedings of the 2021 ACM/IEEE International Conference on Human-Robot Interaction* (pp. 16-23). <http://doi.org/10.1145/3434073.3444645>

Bevins, A., McPhaul, N., & Duncan, B. A. (2020, Nov). Content Is King: Impact of Task Design for Eliciting Participant Agreement in Crowdsourcing for HRI. In *Social Robotics: 12th International Conference, ICSR 2020, Proceedings 12* (pp. 640-651). Springer International Publishing. http://doi.org/10.1007/978-3-030-62056-1_53

Duncan, B. A., Beachly, E., **Bevins, A.**, Elbaum, S., & Detweiler, C. (2018, May). Investigation of communicative flight paths for small unmanned aerial systems. In *2018 IEEE International Conference on Robotics and Automation (ICRA)* (pp. 602-609). IEEE. <http://doi.org/10.1109/ICRA.2018.8462871>

Acharya, U., **Bevins, A.**, & Duncan, B. A. (2017, September). Investigation of human-robot comfort with a small unmanned aerial vehicle compared to a ground robot. In *2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (pp. 2758-2765). IEEE. <http://doi.org/10.1109/IROS.2017.8206104>

Research Mentorship

Tracking Sensors Deployed from an Unmanned Surface Vehicle - Cole-Thomas Johnson, Morgan McCaskill (NSF REU)	Summer 2023
Soil Sample Collection on a UAV - Daniel Denehy, Connor Rudewick (NSF REU)	Summer 2023
Human-Drone Interaction Using Hand Gestures - Mohamed Radalla (NSF REU)	Summer 2023
Eye Tracking During UAV Flight - Kristen Hallas, Grace Venator (NSF REU)	Summer 2021
Using Light for Communication on a UAV - Jemin Oh, Maddy Lazerson (NSF REU)	Summer 2021
Impact of Interaction with UAV in a Simulator - Hadley Susie (UNL STEM Connect)	Summer 2021
Exploration of Vignette Creation - Mohammed Sbai (UNL STEM Connect)	Summer 2021
Drone Gesture Creation & Perception - Jake Chanenson (NSF REU)	Summer 2019
Impact of Task Design in MTurk - Nina McPhaul (NSF REU)	Summer 2019

Awards

UNL College of Engineering Graduate Student Teaching Fellow

Fall 2024-Spring 2025

One-year competitive program that prepares graduate students to teach at a post-secondary level, engaging with evidence-based teaching methods applicable to STEM fields.

David A. Klarner Fellowship

Fall 2024 - Spring 2025

School of Computing Fellowship which recognizes graduate students who have potential for or demonstrated work in foundational research in the area of choice.

Mohr Fellowship

Fall 2023 - Spring 2025

UNL College of Engineering fellowship which recognizes outstanding students in engineering based on their academic performance and potential for accomplishments in their specific field, received twice.

Preparing Future Faculty Fellow

Summer 2023 - Spring 2024

National initiative designed to provide doctoral students who plan to pursue an academic career the opportunity to learn about the teaching, research, and service expectations for faculty at institutions with varying missions and diverse student bodies. Through this process I worked with a faculty mentor, Dr. Brian Dorn from the University of Nebraska-Omaha.

Nebraska Research Days SLAM Finalist

Spring 2024

Campus-wide contest in which graduate, undergraduate students, and post-docs from all disciplines were challenged to communicate their work in a short, dynamic, engaging presentation.

Undergraduate Creative Activities and Research Experience (UCARE) Recipient

Fall 2016 - Spring 2018

Wrote two accepted proposals which funded 10 hours per week of undergraduate research during the academic year. Both proposals were based on the impact of robots in the classroom.

Service

Journal Reviewer

1. Transactions on Human-Robot Interaction (2024)
2. International Journal of Social Robotics (2023, 2024)
3. IEEE Robotics and Automation Letters (RA-L) (2022, 2023)

Conference and Workshop Reviewer

1. CHI Conference on Human Factors in Computing Systems (2025)
2. Technical Symposium on Computer Science Education (SIGCSE TS) (2025)
3. International Conference on Human-Robot Interaction (HRI) (2020, 2021)
4. Workshop: International Conference on Robotics and Automation (ICRA) (2021)
5. International Conference on Ubiquitous Robots (UR) (2020)

Diversity & Outreach Activities

1. Presentation about Robotics for UNL's TRIO ETS program (2023, 2024)
2. Reviewer for UCARE Proposals (2023, 2024)
3. Graduate Student Panelist, CSE Graduate Recruitment Day for UNL (2020, 2021, 2023, 2024)
4. Discussing Robotics for UNL School of Computing Recruitment Video (2023)
5. Presentation Judge for UCARE & REU Poster Presentations (2019, 2023)
6. Eureka! Girls Inc. Robotics Camp Co-Lead (2021)
7. Robotics Demonstration for the UNL Women in Science Conference (2016, 2017, 2018, 2019)
8. Robotics Demonstration for the UNL Hour of Code & Interactive Tech Fair (2019)