Belen Saavedra

belensaavedra.bo@gmail.com | bsaavedrabo.github.io

Education

Berea College   Jan 2021 – Dec 2024
B.A. in Computer and Information Science   Berea, KY

Honors: Dean's List, Full-tuition scholarship, Departmental Computer Science Labor Award
Capstone: Designed and prototyped user-centered ride-share app

Research Experience

Research Assistant   Aug 2024 – Present
Carnegie Mellon University   Pittsburgh, PA
Mentors: Christian Kästner, Nadia Nahar, Grace Lewis

- Designed high-fidelity prototype interfaces and user personas to analyze and synthesize user assumptions in Figma
- Integrated the ChatGPT API to validate user input and suggest options during the requirements elicitation process
- Developed front-end interfaces with HTML, CSS, and the Nuxt.js framework of the explainability and inference latency non-functional requirements

Undergraduate Researcher   Aug 2024 – Present
Social App for Berea College Students   Berea, KY
Mentor: Prof. Deanna Wilborne

- Proposed and designed an independent study class to extend my capstone project
- Implemented a mixed-methods study, including surveys, interviews and focus groups
- Designed user personas and a high-fidelity app prototype in Figma
- Currently developing the mobile app using React Native and Supabase
- Currently leading a team of two student collaborators to assist with data analysis and the development of the app

Research Assistant   Aug 2024 – Present
Memory Museum at Berea College   Berea, KY
Mentor: Dr. Jasmine Jones

- Refined and debugged Python scripts for audio recording and playback functionalities on Raspberry Pi systems
- Organized and led weekly research paper reading sessions to foster collaboration with the Makerspace team
- Supervised and mentored a student in the design and development of a website

Research Intern   May 2023 – Aug 2023
National Center for Atmospheric Research   Boulder, CO
Mentors: Dr. David John Gagne, Dr. John Schreck, Charlie Becker, Gabrielle Gantos

- Visualized error matrices to compare the accuracy of weather prediction models
- Compared 3 Explainable AI (XAI) methods to verify the physical consistency of the model's predictions
- Visualized plots to convey XAI results to a general audience and specialized meteorologists

Research Assistant   June 2022 – Aug 2022
University of California San Diego, Nieh's Lab   San Diego, CA
Mentors: Dr. James Nieh and Ashley Kim

- Pre-processed behavioral data captured in around 1250 hours of video recordings by writing Python scripts
- Independently learned to use 2 deep learning frameworks for multi-object pose estimation
- Documented and presented the analysis results at two undergraduate research conferences in English and Spanish

Publications

- Kim, A. Y., Velazquez, A., **Saavedra, B.**, et al. (2024). *Exposure to constant artificial light alters honey bee sleep rhythms and disrupts sleep. Scientific Reports*, 14, 25865. https://doi.org/10.1038/s41598-024-73378-9

- Schreck, J. S., Gagne, D. J., Becker, C., Chapman, W. E., Elmore, K., Fan, D., Gantos, G., Kim, E., Kimpara, D., Martin, T., Molina, M. J., Przybylo, V. M., Radford, J., **Saavedra, B.**, Willson, J., Wirz, C. (2024). *Evidential Deep Learning: Enhancing Predictive Uncertainty Estimation for Earth System Science Applications. Artificial Intelligence for the Earth Systems*. https://doi.org/10.1175/AIES-D-23-0093.1

Presentations

Society of Hispanic Professional Engineers STEM Research Competition
Oral Presentation: Enhancing Model Requirement Elicitation with Generative AI   2024
Berea Undergraduate Research and Internship Symposium
Oral Presentation: Enhancing Model Requirement Elicitation with Generative AI   2024
Berea Undergraduate Research and Internship Symposium
Poster: Peeking Inside the Black Box: Explainable AI Methods for a Precipitation-type Model   2023
Berea Undergraduate Research and Internship Symposium
Poster: The Effects of Artificial Light at Night (ALAN) on Honey Bee Sleep   2022

Teaching Experience

Tutor Certification, International Tutor Training Program Level 1   2024
Code in Place Section Leader, Stanford Online   2024
Head of Class Teaching Assistant, CSC 236 Data Structures, Berea College   2022
Teaching and Laboratory Assistant, BIO 113 Zoology and BIO 110 General Biology, Berea College   2021

Employment

Data Tracking and Analysis Coordinator   Aug 2023 – May 2024
Office of Sustainability, Berea College   Berea, KY

- Preprocessed datasets, visualized data using Python scripts, and designed the 2023 Methane Inventory report
- Collected and analyzed campus data to identify insights for the 2023 Greenhouse Gas Emissions report

STEM Outreach Associate   Aug 2023 - May 2024
Yahng Discovery Center, Berea College   Berea, KY

- Led the STEM Mentorship Program to match current students with alumni with similar interests

Grants

Travel grant to present at the 2024 SHPE STEM Research Competition $1,762
Travel grant to attend the 2024 NiSTEM SACNAS conference $1,365
Independent Study Katherine Christenson Grant, Summer 2025 $3,000
Independent Study Sloane Shelton Grant, Summer 2024 $4,450
Experiential education grant for Summer Research at UC San Diego $4,300

Leadership

Committee Member, Berea Tech and Ethics Roundtable   Aug 2022 - present
President and Chapter Founder, Society of Hispanic Professional Engineers   Apr 2022 - Aug 2023
President, Google Developers Student Club   Aug 2022 - May 2023
Interdisciplinary Lead, Google Developers Student Club   Aug 2021 - May 2022