Lux Miranda

she/they

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CV current as of 26 August 2024

Education

2022-2027 (expected) **PhD in Computer Science**

- Uppsala University, *Sweden, European Union*
- Defense expected May 2027

2020-2022 **Master of Science in Industrial Engineering**

- University of Central Florida (UCF), *Orlando, Florida, USA*
- Honorary 10,000th master's degree conferred by the college
- Thesis: *Humans in algorithms, algorithms in humans: Understanding cooperation and creating social AI with causal generative models*

2016-2020 **Bachelor of Science with University Honors, double-major in Computational Mathematics and Computer Science, minor in Anthropology, *Cum Laude***

- Utah State University (USU) , *Logan, Utah, USA*
- Honors thesis: *Computationally revealing recurrent social formations and their evolutionary trajectories*

Publications

2024 **Miranda, L.** (2024). Who is a robot? A fundamental model of artificial identity. *2024 33rd IEEE International Conference on Robot and Human Interactive Communication (ROMAN).*

2024 *Honorable mention* **Miranda, L.**, Castellano, G., & Winkle, K. (2024). A Case for Diverse Social Robot Identity Performance in Education. *Companion of the 2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI '24).* https://doi.org/10.1145/3568294.3580168

2023 *Invited manuscript* **Miranda, L.**, Garibay O.O., & Baggio, J. (2023). Evolutionary model discovery of human behavioral factors driving decision-making in an irrigation experiment. *Journal of Artificial Societies and Social Sciences*. https://doi.org/10.18564/jasss.5069

2023 **Miranda, L.**, Castellano, G., & Winkle, K. (2023). Examining the State of Robot Identity. *Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI '23).* https://doi.org/10.1145/3568294.3580168

2023 Freeman, J., Baggio, J., **Miranda, L.**, & Anderies, J.M. (2023). Infrastructure and the energy use of human polities. *Cross-Cultural Research*. https://doi.org/10.1177/10693971221149779

2022 *Invited manuscript* **Miranda, L.** & Garibay O.O. (2022). Approaching (super)human intent recognition in stag hunt with the Naïve Utility Calculus generative model. *Computational and Mathematical Organization Theory*. https://doi.org/10.1007/s10588-022-09367-y

2022 **Miranda, L.** (2022). Humans in Algorithms, Algorithms in Humans: Understanding Cooperation and Creating Social AI with Causal Generative Models. *UCF Electronic Theses and Dissertations*. https://stars.library.ucf.edu/etd2020/1054

2022 Bird, D., **Miranda, L.**, Vander Linden, M. et al. (2022). p3k14c, a synthetic global database of archaeological radiocarbon dates. *Nature Scientific Data*. 10.1038/s41597-022-01118-7

2021 Awarded *Best Human-Autonomy Teaming Paper* **Miranda, L.** & Garibay O.O. (2021). Multi-agent Naïve Utility Calculus: Intent Recognition in the Stag-Hunt Game. *Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2021.* Lecture Notes in Computer Science, vol 12720. 10.1007/978-3-030-80387 232

2020 **Miranda, L.** & Freeman, J. (2020). The two types of society: Computationally revealing recurrent social formations and their evolutionary trajectories. *PLoS One* 10.1371/journal.pone.0232609

Research experience

August 2022 - Present **Doctoral student**, Uppsala Social Robotics Lab. Studying the effects and ethics of emulating human social identity in social robots.

Summer 2022 **PIBBSS Summer Research Fellow**. Awarded the $9,000 USD Principles of Intelligent Behavior in Biological and Social Systems (PIBBSS) summer research fellowship to conduct research on human-aligned AI systems.

August 2020 - May 2022 (4 semesters) **Graduate Research Assistant.** *University of Central Florida Human-Centered Artificial Intelligence Research Laboratory & Complex Adaptive Systems Laboratory.* Contributed to the publication of three journal articles, one conference paper, and my master's thesis.

August 2019 - August 2020 (1 year) **Undergraduate Research Assistant.** *Utah State University Anthropology Program.* As part of an international archaeological working group known as PEOPLE 3000, I helped to create and manage a new radiocarbon database larger and more complete than any other. I also worked to program and test an online social experiment studying cooperation in a common-pool resource management scenario.

Summer 2019 **Peak Summer Research Fellow.** *Utah State University.* One of ten recipients awarded the $4,000 USD Peak Summer Research Fellowship for highly-engaged undergraduate researchers to conduct work on a proposed project over the summer. The research conducted under this fellowship produced my first publication, listed above.

Summer 2018 **NASA Space Grant Consortium Fellow.** Awarded a $1,600 USD NASA space grant fellowship to continue work on a CubeSat mission as the software team leader for the USU Get Away Special Microgravity Research team. Managed a team of ten other programmers. Wrote software for a prototype platform that successfully served over a dozen high-altitude balloon flights. The project (GASPACS) was the world's first CubeSat developed entirely by undergraduate students. It successfully served its mission after being launched to the International Space Station as part of the SpaceX CRS-24 mission and deployed into low Earth orbit on 26 January 2022.

Teaching experience

August 2022 - Present **Teaching Assistant.** *Uppsala University.* Have TA'd for the following master's courses: Social Robotics and Human-Robot Interaction; Intelligent Interactive Systems; System Design with a User Perspective; Data, Ethics, and Law

August 2020 - May 2022 (4 semesters) **Graduate Teaching Assistant.** *University of Central Florida Complex Adaptive Systems Laboratory.* Served as a TA for the following master's courses: Data Mining Methodology I; Statistical Analysis; Parallel and Cloud Computation

January 2018 - May 2019 (3 semesters) **Assistant Lecturer / Recitation Instructor.** *Utah State University Department of Mathematics and Statistics.* Created and gave original lectures for the Differential Equations and Linear Algebra course at USU. Held office hours, created numerous course materials, designed exam questions, and used Python to create an automated tool for online assessment creation which continued to be used by the department after my departure.

August 2016 - May 2017 (2 semesters) **Computer Science Tutor.** *Utah State University Department of Computer Science.* Tutored students in introductory computer science courses. Primarily assisted with homework concepts and code debugging.

Admin experience

August 2023 - August 2024 (1 year) **Chair,** Doctoral Board of Uppsala University. Advocated for and represented all PhD students at Uppsala University's highest decision-making bodies. Coordinated elections to appoint PhD student representatives at boards across the university. Facilitated working groups to resolve structural issues facing PhD students concerning e.g. internationalization, well-being, and the university's climate impact.

November 2022 - November 2023 (1 year)

PhD Student Representative. Uppsala University Vi3 Division. Represented PhD students within the human-machine interaction unit in division-wide decisions.

Industry experience

May 2017 - October 2017 (6 months)

Embedded Engineering Assistant. Space Dynamics Laboratory, Logan, Utah. USA. Developed embedded software for intelligent autonomous systems in C++. Built a technology demo showcasing a multi-agent platform which toured the USA to help garner funding. Developed, documented, and standardized methods for in-house Linux distribution management that continued to be used after my departure.

Scholarships

November 2021 - August 2022 (8 months)

PAGES Data Stewardship Scholarship. Received a $4,400 USD scholarship from PAGES (Past Global Changes) to continue stewardship work on the p3k14c archaeological radiocarbon database as part of the PEOPLE 3,000 working group.

Summer 2018

Honors Study Abroad Scholarship. Received a $1,000 USD scholarship from the USU Honors Program used towards a semester studying historical European art and theatre in Italy, Switzerland, France, and the UK.

2016-2020 (4 years)

Daniels Scholarship. Received the full-ride Daniels Scholarship (final award amount: $58,100 USD) to attend any four-year Bachelor's program in the USA for demonstrating exceptional leadership ability, strength of character, and commitment to community betterment.

Awards

March 2024

Best submission nominee / Honorable mention within the alt.HRI paper track at the ACM/IEEE International Conference on Human-Robot Interaction (HRI '24). Link to paper

May 2022

Honorary 10,000th Master's Degree conferred by the UCF College of Engineering and Computer Science. Awarded for my accomplishments at UCF via faculy nomination.

April 2022

Best 2021 Paper within the Human-Centered Artificial Intelligence Research Laboratory. Awarded by the lab director for my publication in SBP-BRiMS 2021.

July 2021

Best Human-Autonomy Teaming Paper. Awarded by the *Social, Cultural, and Behavioral Modeling (SBP-BRiMS) 2021* conference for my submission.

Selected talks

23 August 2024 *Invited talk* — Keynote: The absurd ease of making queer impact in tech, *QTechDay*, Uppsala, Sweden

14 March 2024 — A case for diverse social robot identity performance in education, *ACM/IEEE International Conference on Human-Robot Interaction*, Boulder, Colorado, USA

31 May 2023 *Invited talk* — *Let's get better at robot identity!*, Mines Interactive Robotics Research Summer Speaker Series. Presented virtually to a live audience in Golden, Colorado, USA

14 March 2023 — Examining the state of robot identity - Poster presentation. *ACM/IEEE International Conference on Human-Robot Interaction*, Stockholm, Sweden

Organized workshops

11 March 2024 — Robo-Identity: Designing for Identity in the Shared World at the 2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI 2024)

Summer and winter schools

August 2024 — WASP Summer School on Generative AI, Norrköping Visualization Center, Sweden

August 2023 — WASP-HS Summer School on AI's Influence on Jobs and Organizations, KTH Royal Institute of Technology, Sweden

December 2022 — HRI Winterschool on Embodied AI, Ghent University, Belgium

January 2021 — Agent-Based Modeling of Social-Ecological Systems, Arizona State University, USA

Skills

Programming — Python (plus pandas, numpy, matplotlib, etc.), NetLogo, JavaScript, Haskell, C++

Tools — Linux, Git, Vim, LaTeX, spreadsheet macros, Canvas

Languages — English (native/C2), Swedish (B2)

Cooking — Mesoamerican, vegan pastries, hot beverages