Ana Sofía M. Uzsoy

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Education

Harvard University　　　　　　　　　　　　　　　　　*Cambridge, MA, USA*
PhD, Astronomy & Astrophysics　　　　　　　　　　　　*September 2022 - present*
- Advisor: Doug Finkbeiner

University of Cambridge　　　　　　　　　　　　　　　*Cambridge, UK*
M.Phil, Machine Learning and Machine Intelligence　　　*September 2021 - August 2022*
- Advisor: Kaisey Mandel
- Thesis: *Scalable Bayesian Inference for Probabilistic Spectrotemporal Models of Type Ia Supernovae*

North Carolina State University (NCSU)　　　　　　　*Raleigh, NC, USA*
B.S. Computer Science, B.S. Physics　　　　　　　　　　*August 2017 - May 2021*
- *Summa cum laude*, Dean's List (All Semesters)
- Minors: Mathematics, Oboe Performance

Work Experience

Google　　　　　　　　　　　　　　　　*Santa Barbara, CA, USA (remote)*
Software Engineering Intern, Quantum AI team　　　　*June 2021 – August 2021*
- Wrote new methods to improve quantum computing simulators in Cirq (Google's quantum computing library) by modeling noise from quantum hardware.
- Wrote internal software design documents and public documentation for Cirq.

Google　　　　　　　　　　　　　　　*Mountain View, CA, USA (remote)*
Software Engineering Intern, Tensorflow/Keras/Kaggle teams　　*May 2020 – July 2020*
- Created natural language processing (NLP) machine learning code examples using TensorFlow 2 for Kaggle, Google's online machine learning and data science competition platform.
- Designed and led launch of new NLP-focused Kaggle competition that remains active.
- Wrote text generation code featured in Google's Data Analyst Professional Certificate Course.

NASA Langley Research Center　　　　　　　　　　　*Hampton, VA, USA*
Intern　　　　　　　　　　　　　　　　　　　　　　*June 2019 – August 2019*
- Worked on team for SAGE III ISS (Stratospheric Aerosol & Gas Experiment III on the International Space Station), an atmospheric science experimental apparatus aboard the ISS.
- Wrote data analysis pipeline to identify cloud interference in spectroscopic atmosphere measurements using machine learning.

Achievements

2021	**National Science Foundation Graduate Research Fellowship**, awarded to outstanding graduate students in STEM disciplines at US institutions
2021	**Churchill Scholarship**, national scholarship providing funding for American students to complete an MPhil at the University of Cambridge
2021	**Rodney I. McCormick Award**, awarded by NCSU Physics Department to a graduating senior for excellence in undergraduate research
2020	**Phi Beta Kappa**, inducted into national honor society for high-achieving undergraduates
2020	**First place poster prize**, McCormick Symposium, the NCSU Physics Department Annual Undergraduate Research Symposium
2020	**NCSU Computer Science Department Faculty Senior Scholar**, awarded to a rising senior based on academic excellence, intellectual breadth, and depth of character
2019	**Barry M. Goldwater Scholarship**, a national scholarship awarded to promising undergraduates who plan to pursue a STEM research career
2017	**Park Scholarship**, a full-ride merit scholarship to NCSU awarded on the basis of outstanding accomplishments and potential in scholarship, leadership, character, and service

Publications

Uzsoy, **A. S. M.**, Thorp, S., Grayling, M., & Mandel, K. S. (in prep.). Variational inference for acceleration of SN Ia photometric distance estimation with BayeSN.

Grayling, M., Thorp, S., Mandel, K. S., Dhawan, S., **Uzsoy**, **A. S.**, Boyd, B. M., Hayes, E. E., & Ward, S. M. (2024). Scalable hierarchical BayeSN inference: Investigating dependence of SN Ia host galaxy dust properties on stellar mass and redshift. *arXiv e-prints*, Article arXiv:2401.08755, arXiv:2401.08755.

Saydjari, A. K., **Uzsoy**, **A. S. M.**, Zucker, C., Peek, J. E. G., & Finkbeiner, D. P. (2023). Measuring the 8621 Å diffuse interstellar band in Gaia DR3 RVS spectra: Obtaining a clean catalog by marginalizing over stellar types. *The Astrophysical Journal*, *954*(2), 141.

Uzsoy, **A. S. M.**, Zareiesfandabadi, P., Jennings, J., Kemper, A. F., & Elting, M. W. (2021). Automated tracking of *S. pombe* spindle elongation dynamics. *Journal of Microscopy*, *284*(1), 83–94.

Uzsoy, **A. S. M.**, Rogers, L. A., & Price, E. M. (2021). Radius and mass distribution of ultra-short-period planets. *The Astrophysical Journal*, *919*(1), 26.

Presentations

Posters / Flash Talks

- 243rd American Astronomical Society Meeting; 2024 January 7-12; New Orleans, LA
- NCSU Physics Department McCormick Symposium; 2020 May 6; Raleigh, NC (virtual)
- 235th American Astronomical Society Meeting; 2020 January 4-8; Honolulu, HI
- 2019 American Society for Cell Biology Meeting; 2019 December 7-11; Washington, DC
- Triangle Cytoskeleton Meeting; 2019 September 30; Saxapahaw, NC
- NCSU Spring Undergraduate Research Symposium; 2019 April 24; Raleigh, NC
- NCSU Physics Department McCormick Symposium; 2019 April 22; Raleigh, NC
- Triangle Cytoskeleton Meeting; 2018 September 24; Saxapahaw, NC
- Intel International Science & Engineering Fair, 2017 May 14-19; Los Angeles, CA

Talks

- Harvard Astrostatistics Seminar; 2024 February 7; Cambridge, MA
- NCSU Physics Department McCormick Symposium; 2021 May 5; Raleigh, NC (virtual)
- University of Chicago STEM Research Symposium; 2018 August 1; Chicago, IL
- Leadership Alliance National Symposium; 2018 July 27-29; Hartford, CT

Teaching & Service

Scientific/Local Organizing Committee, AstroAI Workshop *February 2024 - present*
- I am helping to organize a workshop for AI in Astrophysics to take place at the Harvard-Smithsonian Center for Astrophysics in June 2024.

Teaching Fellow, Machine Learning for Astrophysics *January 2024 - present*
- I hold office hours & do grading for Astro 205, a graduate course on machine learning techniques for astrophysics at Harvard.

President, NCSU Women in Physics *August 2020-May 2021*
- I organized a peer-mentoring program, speaker series and social events to promote a community of women and gender minorities in the NCSU physics department.

Skills

Programming	Python, Julia (advanced) C, R, Java, MATLAB (intermediate) C++, HTML/CSS, Assembly (familiar)
Technology	LaTeX, Git/GitHub, UNIX, Bash, Mathematica, Microsoft Office
Miscellaneous	Spanish (fluent), Soldering, Circuit wiring, Bacterial culture