Ana Sofía M. Uzsoy

ana_sofia.uzsoy@cfa.harvard.edu | asmuzsoy | anasofiauzsoy

Education

Harvard University
Cambridge, MA, USA

PhD, Astronomy & Astrophysics (in progress) *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 in STEM disciplines 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

Grayling, M., Thorp, S., Mandel, K. S., Dhawan, S., **Uzsoy**, **A. S. M.**, 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. *Monthly Notices of the Royal Astronomical Society*, *531*(1), 953–976.

Uzsoy, **A. S. M.**, Thorp, S., Grayling, M., & Mandel, K. S. (2024). Variational Inference for Acceleration of SN Ia Photometric Distance Estimation with BayeSN. *arXiv e-prints*, Article arXiv:2405.06013, submitted to MNRAS.

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

- Rare Gems in Big Data Conference; 2024 May 20-24; Tucson, AZ
- 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

- NSF's NOIRLab; 2024 May 24, Tucson, AZ
- Harvard CHASC 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, 2024 AstroAI Workshop

February 2024 - June 2024

- Helped arrange speakers, coordinated volunteers, reviewed abstracts, and chaired sessions for the 2024 AstroAI Workshop at the Harvard-Smithsonian Center for Astrophysics.

Teaching Fellow, Machine Learning for Astrophysics

January 2024 - May 2024

- Held office hours, graded assignments and provided feedback, and supported students in 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