

Nolan Koblischke

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WORK EXPERIENCE

Polymathic AI

Junior Research Scientist, Multimodal Scientific Foundation Models

New York City, USA

Summer 2025

École Polytechnique Fédérale de Lausanne (EPFL)

Research Internship

Geneva, Switzerland

Summer 2022 & 2023

EDUCATION

University of Toronto

Ph.D. in Astronomy and Astrophysics

Thesis: Accelerating astrophysics research with foundation models

Advisors: Dr. Jo Bovy

Toronto, ON, Canada

2023 – 2028 (expected)

University of British Columbia, Okanagan

B.Sc. in Physics with Honours, Minor in Computer Science

Thesis: Tip of the red giant branch calibration using long-period variable stars

Advisors: Dr. Richard Anderson (EPFL) & Dr. Laurent Eyer (UNIGE)

Kelowna, BC, Canada

2019 – 2023

PEER-REVIEWED PUBLICATIONS

- Koblischke, Nolan**, Jang, Hyunseok, Menou, Kristen & Ali-Dib, Mohamad, Gravity-Bench-v1: A Benchmark on Gravitational Physics Discovery for Agents, *ICML 2025* (poster). arXiv:2501.18411 [cs.AI]
- Koblischke, Nolan** & Bovy, Jo, SpectraFM: Tuning into Stellar Foundation Models, *NeurIPS 2024 Workshop: Foundation Models for Science*. arXiv:2411.04750 [astro-ph.IM]
- Koblischke, Nolan** & Anderson, Richard I., Calibrating and Standardizing the Tip of the Red Giant Branch in the Small Magellanic Cloud Using Small-amplitude Red Giants, *Astrophys. J.* 974, 181 (2024) arXiv:2406.19375 [astro-ph.SR].
- Anderson, Richard I., **Koblischke, Nolan** & Eyer, Laurent, Small-amplitude Red Giants Elucidate the Nature of the Tip of the Red Giant Branch as a Standard Candle, *Astrophys. J. Letters* 963, L43 (2024) arXiv:2303.04790 [astro-ph.CO].

SUBMITTED PUBLICATIONS / PUBLICATIONS UNDER REVIEW

- Ye, C., Yuan, S., Cooray, S., Dillmann, S., Roque, I. L. V., Baron, D., Frank, P., Martin-Alvarez, S., **Koblischke, Nolan**, Qu, F. J., Yang, D., Wechsler, R., & Ciucă, I., ResearchBench: Evaluating AI Agents on End-To-End Astrophysics Research Paper Replication (submitted.)

AWARDS & HONORS

Data Sciences Institute Doctoral Student Fellowship (\$75,000 over 3 years)	2025 – 2028
Advisors: Dr. Jo Bovy & Dr. Chris Maddison	
FAST Doctoral Award (\$76,030 over 4 years)	2023 - 2027
NSERC CGS-M (\$27,000)	2024 - 2025
ThinkSwiss Research Scholarship (\$8,700)	2023
UBC Go Global International Learning Programs Award	2022-2023
EPFL Scholarship of Excellence (\$13,400)	2022
UBC Second in Class for Physics	2020 - 2023
UBC Presidential Scholars Award (\$30,000)	2019 - 2023
UBC Deputy Vice-Chancellor Scholarship	2019 - 2022
McGill Physics Hackathon Winner - Machine Learning Challenge	2021
UBC Tuum Est Experiential Award	2019

TALKS & PRESENTATIONS

“SpectraFM: Tuning into Stellar Foundation Models” Poster, Workshop: NeurIPS Foundation Models for Science, Vancouver, 2024.

“Gravity Bench: A Benchmark for an AI Astronomer” Talk, Workshop: ESOGPT: Natural Language Processing in Astronomy, 2024, [Link](#)

“Gravity Bench: A Benchmark for an AI Astronomer” Talk, Workshop: NLP for Space Science, ESA/ESAC Madrid, 2024, [Link](#)

“SpectraFM: Tuning into Stellar Foundation Models” Talk, Workshop: AstroAI, Harvard-Smithsonian CfA, 2024, [Link](#)

“SpectraFM: Tuning into Stellar Foundation Models” Poster, Conference: CASCA, Toronto, 2024.

“ChatGaia: Talk to the Gaia Archive in Natural Language” Talk, Conference: Debating the Potential of Machine Learning in Astronomical Surveys, CCA/Flatiron Institute, 2023, [Link](#)

VOLUNTEER EXPERIENCE

Astrophysics Undergraduate Teaching Assistant, University of Toronto	2023 – Present
AstroTours Committee Member, University of Toronto	2023 – Present
Graduate Student Peer Mentor, University of Toronto	2023 – Present
Undergraduate-level Math and Sciences Tutor	2017 - 2023
Astronomy Club, University of British Columbia	
Co-Founder & President	2019 – 2023
Atmospheric Cloud Chamber of the Okanagan (AC2O)	
Vice President	2019 – 2022
Built and launched a stratospheric balloon experiment to detect cosmic rays	
Esrange Space Center, Sweden	

MISCELLANEOUS

LLM Tools for Astronomers	2023 – Present
Developed ChatGPT-powered tools to democratize access to astronomical data and research	
ChatGaia: Natural language interface to Gaia’s 2 billion source database, reaching 68,000+ viewers	
ChatADS: Literature search assistant enabling multilingual paper search and understanding	
AstroCoder: Code generation tool for astronomical data analysis	
Media Coverage	
Research featured in: EPFL News , Space.com , Universe Today , Phys.org , Tech Explorist , MyScience	