


# MAYA MALLABY-KAY

maya.mallabycay@gmail.com ◊ (202) 309 - 2789 ◊  [linkedin.com/in/maya-mallaby-kay/](https://www.linkedin.com/in/maya-mallaby-kay/)

---

Astrophysicist with 5+ years of experience in quantitative analysis and research

- Experienced data scientist passionate about leveraging these skills to help combat climate change
- Lead scientist on 4 projects involving statistical analysis and machine learning techniques
- Collaborator experienced in working with diverse groups to develop comprehensive analyses

## EDUCATION

---

**University of Chicago, Chicago**

*Expected June 2024*

PhD, Astrophysics

**University of Michigan, Ann Arbor**

*August 2020*

MSc, Physics

**Columbia University, New York**

*December 2017*

BA, Astrophysics

## RESEARCH AND DATA ANALYSIS EXPERIENCE

---

**Argonne National Lab, Computational Physics and Cosmology Group**

June 2023 - Current

*Graduate Researcher*

*Chicago, IL*

- Develop large-scale simulations of the observable universe using JAX-based emulators in Python; resulting in 10,000X reduction in processing time and enabling fast predictions for 10 billion galaxies
- Critically engage with the scientific literature to integrate observational results into the simulation pipeline
- Present findings to multifunctional teams, demonstrating strong communication and collaboration abilities

**University of Chicago, Department of Astronomy & Astrophysics**

September 2020 - Current

*Graduate Researcher*

*Chicago, IL*

- Use statistics and modeling techniques with pandas, astropy and scipy, to study faint signals from distant filaments of gas in 2D maps of the sky
- Conduct a statistical analysis of 250,000 distant galaxies using a Markov Chain Monte Carlo parameter estimation code - [Paper accepted to PRD](#)
- Collaborate with scientists from multiple institutions to develop analysis pipelines and scientific insights
- Write scientific papers and present research findings to both technical and non-technical audiences

**University of Michigan, Department of Physics**

September 2018 - September 2020

*Graduate Researcher*

*Ann Arbor, MI*

- Prepared Python tutorials and a Docker container to enable users to work with remote sensing data from the Atacama Cosmology Telescope's data releases - [Paper accepted to ApJS](#) and tutorials on [GitHub](#)
- Used Pixell, numpy and astropy to analyze maps of the Cosmic Microwave Background

## TEACHING AND OUTREACH EXPERIENCE

---

**Atacama Cosmology Telescope Collaboration**

April & August 2021

*Taught two data science summer schools*

**Science Communication Talks**

October & November 2019

*Nerdnite Ann Arbor & Astro on Tap*

## AWARDS AND CERTIFICATIONS

---

Department of Energy SCGSR Fellow

*June 2023*

Intermediate SQL for Data Scientists - LinkedIn Learning

*January 2023*

National Science Foundation Graduate Research Fellow

*May 2018*

## TECHNICAL SKILLS AND INTERESTS

---

**Python Skills**

Pandas, Scipy, Sklearn, JAX, tensorflow, Flax

**Additional Technical Skills**

Data visualization, Statistics, Jupyter Notebooks, SQL, GitHub

**Interests**

Cooking (degree in pâtisserie), DEI in STEM, Rock climbing, Traveling