Kyle K.M. Kabasares

Phone: (415) ***-**** (Contact Kyle for number) | Email: kkabasar@uci.edu
Website: www.kylekabasares.com | GitHub: https://github.com/kylekaba

Experience

University of California, Irvine

Researcher   **June 2018-Present**

- Developed and implemented custom scientific tools in Python using multiple libraries (numpy, matplotlib, scipy, etc.) libraries to analyze large datasets, resulting in improved data accuracy and analysis efficiency.

- Calibrated, reduced, and cleaned raw astronomical data from multiple telescopes for the purpose of data modeling.

- Programmed a non-linear numerical optimization framework to optimize high-dimensional models.

- Performed Monte Carlo simulations, applying statistical methods to calculate and quantify uncertainties in model parameters.

- Co-authored 3 scientific papers featured in *The Astrophysical Journal*.

NASA

Student Airborne Research Program Intern   **June 2016-August 2016**

- Examined years of NASA atmospheric data taken from multiple instruments to assess variations in chemical concentrations over time.

- Utilized MATLAB to model relationships among different chemical species.

- Retrieved external satellite and weather station data to compare and contrast with flight data.

- Assisted in the collection of air quality data on both NASA's DC-8 airliner and on field missions on the ground.

University of California, Merced

Undergraduate Student Researcher   **May 2015-June 2017**

- Designed experiments involving the mixture of nanoparticle quantum dots in liquid crystal media to improve upon current quantum dot self-assembly methods.

- Utilized a fluorescent microscope to examine synthesized quantum dot mixtures, characterizing optical properties and contributing to ongoing research efforts in nanotechnology.

- Successfully learned and adhered to laboratory standard operating procedures (SOPs), including safety protocols, experimental protocols, and record-keeping practices, resulting in safe and efficient laboratory operations and the successful completion of research objectives.

Education

University of California, Irvine

Doctor of Philosophy **(PhD)** in Physics   June 2023
Master of Science **(MS)** in Physics, GPA: 3.87   December 2019
Relevant Coursework: Machine Learning & Statistics for Physicists

University of California, Merced

Bachelor of Science **(BS)** in Physics, GPA: 3.89   May 2017
Minor: Applied Mathematics
Honors: *summa cum laude*
Relevant Coursework: Probability & Statistics, Mathematical Modeling, Numerical Analysis

Projects and Publications

PhD Project: Designing Custom Python Tools to Weigh Supermassive Black Holes (Link)

- Developed a set of custom routines in Python to analyze and model astronomical data.

- Applied self-developed tools to perform PhD research in astrophysics.

- Published a lead-author paper on scientific findings and results.

NASA Internship Project: How Did the California Drought Affect Pollution? (Link)

- Conducted an individual summer research projected

- Used MATLAB and geographic information systems (GIS) to understand pollution trends.

- Co-authored a paper on the effects of drought on ozone production in the atmosphere.

Certifications

Coursera

- Supervised Machine Learning: Regression and Classification from Stanford Online and DeepLearning.AI (Certificate)

- Advanced Learning Algorithms from Stanford Online and DeepLearning.AI (Certificate)

Honors, Awards, & Hobbies

- Chambliss Astronomy Achievement Award (Honorable Mention) - American Astronomical Society   June 2022

- Honorable Mention - National Science Foundation Graduate Research Fellowship Program   April 2019

- UC Merced Physics Dept. Senior Thesis Presentation Award   May 2017

- UC Merced Outstanding Undergraduate Award in Physics   May 2017

- YouTube Partner focusing on physics, math, and astronomy education with nearly 4,000 channel subscribers.