Matthew **Portman**

Contact

Mobile no:-
+1-214-240-0280

Email:-
portmanm
@uci.edu

GitHub:-
github.com/
MatthewPortman

Programming Experience

C++
SQL
LaTeX
Bash
Python
SLURM
MATLAB
Fortran90
OpenMP/MPI/CUDA

Education

2017–2024 Ph.D. in Computational Science — GPA: 3.78
San Diego State University & University of California, Irvine
- Dissertation: "Using SpArcFiRe to Automate GALFIT's Multi-Component Decomposition of Spiral Galaxies"

2012–2016 B.S. in Physics — GPA: 3.65
University of Texas at Dallas

Research Experience

2019–Pres. **Research Assistant** under Dr. Wayne Hayes — University of California, Irvine
Modeling Spiral Galaxies
- Utilize optimization methods to model galactic light profiles via GALFIT.
- Develop an algorithm to pipe results from spiral arm detection algorithm, SpArcFiRe, into GALFIT in order to automate galactic structure parameterization.

2021–2022 **Visiting Scholar** under Dr. Antonella Palmese — Fermilab, LBL
Multi-Messenger Astronomy
- Identify transients from multi-messenger sources using DESI observations and correlate to confidence intervals of gravitational wave localization maps.

2021, 2022 **Graduate Intern** under Drs. Pete Anninos & Rob Hoffman — LLNL
Binary Accretion Simulation
- Simulate hyper-accretion inflow onto the surface of neutron stars from a binary companion using COSMOS++ to predict observational signature.

2017–2019 **Research Assistant** under Dr. Fridolin Weber — San Diego State University
Neutron Star Simulation
- Developed Fortran90 code to simulate Neutron Star core.

Work Experience

2019–2024 **Teaching Assistant** — University of California, Irvine
Intro to Coding - Python
- Teach and develop interactive coding assignments in Python.

2017 **Adjunct Faculty** — Collin County Community College
Mathematics Professor

Highlighted Publications and Awards

2024 **Automated Multi-Component Decompositions of Spiral Galaxies** — Under Review, MNRAS
M. Portman and W. Hayes.

Sept. 2023 **A Re-Assessment of SpArcFiRe's Performance on Toy Spiral Galaxies** — MNRAS
M. Portman and S. Mesforoush and W. Hayes.

2021–2023 **LSSTC Data Science Fellow** — LSST-DA
Award granted to supplement data science instruction in Astronomy.

2021 **URA Visiting Scholar Program/Award** — Fermilab
Award granted to perform collaborative research with Fermilab.

2019, 2021 **Proceedings: ACCESS Conference** — San Diego State University
Poster presentation of research done with Dr. Wayne Hayes.