

Matthew Portman

Contact

Email:-
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GitHub:-
github.com/
MatthewPortman

Programming Experience

C++
SQL
L^AT_EX
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

- 2019–2024 **Research Assistant** under Dr. Wayne Hayes University of California, Irvine
Modeling Spiral Galaxies
– Developed the `GalfitModule` an object-oriented, distributed framework to automate parameterization of thousands of spiral galaxies within minutes.
- 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.
- 2021–2022 **Visiting Scholar** under Dr. Antonella Palmese DESI
Multi-Messenger Astronomy
– Developed a machine learning identification pipeline to filter millions of observations and correlate to events within gravitational wave probability maps.
- 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 and Intermediate Python
- 2017 **Adjunct Faculty** Collin County Community College
Mathematics Professor

Highlighted Publications and Awards

- 2024 **Automated Multi-Component Decompositions of Spiral Galaxies** Under Review
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.
- 2020 **DTEI Summer Fellowship** University of California, Irvine
Award granted to undertake equity-based pedagogical instruction.
- 2019, 2021 **Proceedings: ACCESS Conference** San Diego State University
Poster presentation of research performed under Dr. Wayne Hayes.