

# Matthew Portman

## Contact

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

Email:-  
portmanm  
@uci.edu

GitHub:-  
github.com/  
MatthewPortman

## Programming Languages

L<sup>A</sup>T<sub>E</sub>X  
Bash  
Python  
Fortran  
MATLAB  
OpenMP/MPI/CUDA

## Education

- 2017–Pres. Ph.D. Candidate in Computational Science GPA: 3.77  
San Diego State University & University of California, Irvine  
*Relevant Coursework*
- Advanced Computational PDE
  - Parallel Computing
  - Machine Learning
  - Optimization
- 2012–2016 B.S. in Physics GPA: 3.65  
University of Texas at Dallas  
*Astrophysics Specialization*

## 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, [SpAR-cFiRe](#), into [GALFIT](#) in order to automate galactic structure parameterization.
- 2021–Pres. **Visiting Scholar** under Dr. Antonella Palmese Fermilab  
*Multi-Messenger Astronomy*
- Identify transients from multi-messenger sources using [DESI](#) observations and correlate to confidence intervals of gravitational wave localization maps.
- 2021 **Graduate Intern** under Drs. Pete Anninos & Rob Hoffman Lawrence Livermore National Lab  
*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*
- Simulated hyperdense matter inside Neutron Stars using Fortran.

## Work Experience

- 2019–Pres. **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*
- Taught and developed interactive course material to assess student success.

## Publications and Awards

- 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.
- 2017–2019 **Graduate S-STEM Fellowship.** San Diego State University  
Award granted to provide mentorship and research opportunities.
- 2016 **Proceedings: 227<sup>th</sup> AAS Conference** Kissimmee Florida  
Poster presentation of research done for REU.
- 2015 **Research Experience for Undergraduates** Rochester Institute of Technology  
Research award granted to perform research under Dr. Benjamin Sargent.