

# Brendan Boyd

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biboyd.github.io

+1 (248) 697-7902

## Education

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<b>SUNY Stony Brook University</b> Physics & Astronomy Department <i>PhD Candidate in Physics, with Concentration in Astronomy</i>	2020-Present
<b>Michigan State University</b> College of Natural Science, Honors College <i>Bachelor of Science, Astrophysics Minors in Math and CMSE</i>	2016-2020

## Research & Teaching Experience

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<b>Graduate Research Assistant</b> – Stony Brook University Computational Astrophysics Dissertation Research. Using a low Mach reactive hydrodynamic code to study the convective Urca process in relation to type Ia supernovae. Multiple publications in the Astrophysical Journal	2022-Present
<b>Teaching Assistant</b> – Stony Brook University	2020-2021
<b>Undergraduate Research Assistant</b> – Michigan State University Astrophysics Thesis Research. Developed SALSA Python package for analyzing galaxy simulations. Publication in the Journal for Open Source Software (JOSS)	2019-2020
<b>Undergraduate Learning Assistant</b> – Michigan State University	2019-2020

## Computational Skills

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### Programming Skills:

Proficient in Python  
Proficient in C++  
Competent in FORTRAN  
Competent in HPC workflows (e.g. SLURM, bash scripting)  
Competent in OpenMP threading  
Competent in MPI parallelism

### Computational Fluid Modeling

Low Mach Flows  
(Nuclear) Reactive Flows

## Software Projects - Contributor/Developer

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<b>MAESTROeX</b> - <a href="https://github.com/AMReX-Astro/MAESTROeX">github.com/AMReX-Astro/MAESTROeX</a>	2022-Present
<b>pynucastro</b> - <a href="https://github.com/pynucastro/pynucastro">github.com/pynucastro/pynucastro</a>	2022-Present
<b>initial models</b> - <a href="https://github.com/AMReX-Astro/initial_models">github.com/AMReX-Astro/initial models</a>	2022-Present
<b>SALSA</b> - <a href="https://github.com/biboyd/SALSA">github.com/biboyd/SALSA</a>	2019-2021