

Matthew Bundas

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EDUCATION

New Mexico State University

Las Cruces, NM

Master of Science in Computer Science GPA: 4.0/4.0

Dec, 2021

Michigan State University

East Lansing, MI

Bachelor of Science in Astrophysics GPA: 3.6/4.0

May, 2019

EXPERIENCE

New Mexico State University

Las Cruces, NM

Graduate Research Assistant

Aug, 2019 - Dec 2021

- Performed valuable research funded by major national scientific organizations.
- Developed deep learning solutions for NASA's GLOBE Observer Program, a project imploring the public to gather image data used to study global landscape patterns and characteristics.
 - Built novel computer vision Semi-Supervised Active Learning Classification Framework.
 - Utilized TensorFlow and NMSU's high performance computing resources.
 - Overcame real-world dataset issues, scarcity, imbalance, noise etc.
 - Outperformed citizen classification of land-cover content in images.
 - Designed, implemented SQL database to facilitate experiments, community hackathon.
- Advanced the National Institute of Standards and Technology's (NIST) Cyber-physical System (CPS) Framework, a knowledge representation and reasoning approach to managing a CPS.
 - Engineered a python-based graphical UI facilitating creation of a CPS's digital representation.
 - Theorized logic-based metrics to evaluate a CPS's trustworthiness and cybersecurity.
 - Integrated representation of AI-related concerns into NIST CPS Framework.
 - Collaborated directly with various external parties at NIST and Saint Joseph's University.
 - Published in IEEE, PRIMA, KR, TPLP journals. Tutorials performed for KR, IJCAI.

Graduate Teaching Assistant

Jan, 2020 – Dec, 2020

- Completed two semesters TAing introductory undergraduate Computer Science courses.
 - CS111: CS Principles - Assisted instruction of lab periods, graded labs and homeworks.
 - CS171: Intro to CS - Assisted facilitation of online coursework, office hours, graded assignments.

Michigan State University

East Lansing, MI

Observatory Operator

Mar 2017 – Aug 2019

- Responsible for end-to-end operation of observatory telescope. Completed 1,000+ observations.
- Reduced collected data using AstroImageJ, and python scripts.
- Promoted to expert observer, trained peers in final 1+ year.
- Volunteered at public observing nights, operated ground telescopes, organized/facilitated activities.

Undergraduate Research Assistant

May 2018 – June 2019

- Explored affects of differing fusion reaction rates on high-mass star's evolution.
- Facilitated 2-D magnetohydrodynamic astrophysical simulations using FLASH code.
- Automated workflow on MSU's High Performance Computing Center resources.
- Analyzed, visualized simulations using Python. Work contributed to senior thesis.

ADDITIONAL

- Relevant Coursework: AI I&II, Deep Learning, Machine Learning, Database Management I&II, Comp. Modeling I&II, Comp. Physics, Parallel Computing, Comp. Statistics
- Programming Languages: Python, C++, Java
- Other Skills: GitHub, SQL, TensorFlow, High Performance Computing, LaTeX, Logic Programming