William V. Jardee

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EDUCATION

Ph.D. in Computer Science *Aug 2022 - Present*
Montana State University, Bozeman, MT GPA: 3.81/4.0

B.S. in Physics *Aug 2018 - May 2022*
Montana State University, Bozeman, MT GPA: 3.81/4.0
- Summa Cum Laude
- Honors Highest Distinction
- Phi Kappa Phi Honors Society
- Minors in Computer Science and Mathematics

INTERESTS

Research
- Mathematical modeling of swarm intelligence models and their hyperparameters
- Ethical artificial intelligence
- Explainable and interpretable artificial intelligence

Teaching
- Intuitive explanations of mathematical concepts
- Accessibility to mathematics for disadvantaged groups

Accessibility
- Principles of effective digital accessibility
- Ease of implementation of accessibility into already established workflows

RELEVANT COURSES AND TECHNICAL SKILLS

Languages
- Coding: Python, Java, C/C++, BASH
- Mathematical Analysis: Matlab, Mathematica, Excel
- Communication: Git/GitHub, LaTeX, HTML, CSS, Markdown
- Computer Systems: Arch Linux, Ubuntu, Windows, Arduino

Computer Science
- Adv. AI/ML *(CSCI 446, CSCI 547, CSCI 546, CSCI 550, M 508)* [1]
- Computational Geometry *(CSCI 534)*
- Computation Theory *(CSCI 538, CSCI 532)*

Mathematics
- Probability Theory *(PHSX 446, STAT 501)*
- Analytic and Approximate Differential Equations
- Operator Algebra/Metric Calculus
- Linear Algebra *(M 333)*
- Dynamical/Chaotic Systems *(M 454, M 455)*
- Index/Einstein Notation

Physics
- Intro to General Relativity *(PHSX 491)*
- Quantum Mechanics *(PHSX 461, PHSX 462)*
- Elementary Particle Physics *(PHSX 451)*

Communication and Leadership
- Seminar: Worldbuilding *(HONR 494)*
- Leadership for Future STEM Professionals *(HONR 491)*

TEACHING EXPERIENCE

Introduction to ML Grading Assistent (EN605.649) *Jan 2023 -Present*

[1] Lables correspond with course numbers from Montana State University. CSCI: Computer Science, PHSX: Physics, M: Mathematics, STAT: Statistics.

Whitney School of Engineering; JHU, Maryland

Course Redesign: Introduction to ML (EN605.649) *Dec 2023 Jan 2024*
Whitney School of Engineering; JHU, Maryland

AI Substitute Lecturer (Ethical AI) *Nov 2023*
Gianforte School of Computing; MSU, Bozeman

Hillman Scholars Tutor *Jul 2021 - May 2022*
Allen Yarnell Center for Student Success; MSU, Bozeman

Math Stats Center Tutor *Aug 2021 - May 2022*
Mathematics Dept.; MSU, Bozeman

Introductory Physics Proctor/Grader (PHSX 207) *Jan 2021 - May 2021*
Physics Dept.; MSU, Bozeman

Introductory Physics Student Lab Assistant (PHSX 205) *Aug 2020 - Nov 2020*
Physics Dept.; MSU, Bozeman

Smarty Cats Tutor *Aug 2019 - May 2020*
Allen Yarnell Center for Student Success; MSU, Bozeman

Volunteer STEM Tutor *Oct 2019 - Mar 2020*
The Rock Youth Center; Bozeman, MT

RESEARCH EXPERIENCE

Graduate Researcher
Numerical Intelligent Systems Laboratory; MSU, Bozeman
z43 *AI/ML Exhibit at American Computer and Robotics Museum*
Fall 2023 - present
Modeling of Emergent Behavior in Ant Colony Optimmization *Fall 2022 - present*
Using CNNs and PIFs for classifying Prostate Cancer *Summer 2023*
Fault Diagnosis of Fighter Planes using CTBN *Summer 2023*

Undergraduate Researcher *Aug 2020 - Dec 2020*
Dr. John Sample's Lab; MSU, Bozeman

Undergraduate Researcher *Jan 2020 - Apr 2020*
Dr. Rufus Cone's Lab; MSU, Bozeman

MISC. EXPERIENCE

SPS Treasurer *Feb 2020 - Jan 2022*
Society of Physics Students at Montana State University, Bozeman

AWARDS AND GRANTS

Center for Science, Technology, Ethics, and Society *Fall 2023*

Benamin Fellowship *Sept 2022*

Dept. Physics Outstanding Graduating Senior *Apr 2022*

Physics Departmental Scholarship
Norman Mac Rugheimer Scholarship *Aug 2021, Jan 2022*
Asbridge Physics Scholarship *Aug 2020*

Montana University Systems Scholarship *May 2018*

Bertha Feaster Scholarship *May 2018*

POSTERS AND PRESENTATIONS

MSU Relativity and Astrophysics (RelAstro) Seminar
Introduction to Data Exploration with Machine Learning *Nov 2022*

MSU Guest Lecturer
Introduction to Python Seminar: Building Neural Networks *Nov 2022*

MSU Student Research Celebration
Rule Extraction from a Random Forest *May 2022*

SPS Undergraduate Colloquium
How to Teach Yourself to Code *Nov 2022*

RREA Propagation Theory — *Oct 2021*
The Better Poster Design — *Feb 2021*
Teaching Yourself Computer Languages — *Feb 2021*
Introduction to Python — *Feb 2021*
The Basics of Climate Physics — *Sept 2020*

OUTREACH

Montana Science Center
Summer Camp; Volunteer Counselor — *Jun 2022 - Jul 2022*
Science After Dark; Event Volunteer — *Oct 2022*
Pride in STEM; Event Volunteer — *Nov 2022*

Museum of the Rockies
Grossology; Event Volunteer — *Oct 2021*

Society of Physics Students
Liquid Nitrogen Ice Cream; Organizer — *Oct 2021*
Careers in Industry Panel; Moderator — *Mar 2021, Oct 2020*