

William V. Jardee

WillJardee.github.io
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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*

¹Labes 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
 Sensors, ML, and AI in Real Time Fire Science Spring 2024 - present
 AI/ML Exhibit at American Computer and Robotics Museum Fall 2023 - present
 Modeling of Emergent Behavior in Ant Colony Optimization 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
PRESENTA-
TIONS**

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

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| <i>RREA Propagation Theory</i> | Oct 2021 |
| <i>The Better Poster Design</i> | Feb 2021 |
| <i>Teaching Yourself Computer Languages</i> | Feb 2021 |
| <i>Introduction to Python</i> | Feb 2021 |
| <i>The Basics of Climate Physics</i> | Sept 2020 |

OUTREACH

Science Mentorship Institute (sci-MI)

CS Curriculum Team Jan 2024 - Present

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