JENENE MICHELE KEARNEY, Ph.D.

📍 733 Horseshoe Falls Dr, Orlando, FL 32828-6652

✉️ maxwelomwoyo900@email.com |

PROFESSIONAL SUMMARY

Accomplished Physics Researcher (Ph.D.) with strong expertise in quantum mechanics, computational modeling, and artificial intelligence applications in physical sciences. Skilled in leveraging advanced simulation tools, data analysis, and AI-based frameworks to improve the accuracy and interpretability of large language models (LLMs). Demonstrated experience in developing domain-specific datasets, evaluating model responses, and integrating theoretical physics with modern AI systems. Committed to collaborative, high-impact research at the intersection of physics and artificial intelligence.

EDUCATION

Doctor of Philosophy (Ph.D.) in Physics
Michigan State University – East Lansing, MI
Graduated: 2024

- Dissertation: *AI-Assisted Quantum Simulations for Predictive Physics Modeling*
- Specialized in Quantum Computing, Astrophysics, and Machine Learning Integration
- Published in *Nature Physics* and *Physical Review Letters*
- Conducted interdisciplinary research with the MSU Computational Physics Group

Master of Science in Physics
Stanford University – Stanford, CA
Graduated: 2021

- Thesis: *Data-Driven Optimization of Quantum Resonance Simulations*
- Member of the Stanford AI in Science Research Lab
- Focused on machine learning for experimental and theoretical physics applications

Bachelor of Science in Applied Physics
Harvard University – Cambridge, MA
Graduated: 2019

- Graduated with High Honors
- Research: "Photon Dynamics and Quantum Field Interference"
- Member, Harvard Undergraduate Research Scholars Program

RESEARCH & PROFESSIONAL EXPERIENCE

Postdoctoral Research Fellow – Department of Physics and AI Research
Harvard University, Cambridge, MA
Jan 2024 – Present

- Collaborate with AI research teams to improve model comprehension of complex physics theories.

- Evaluate and refine LLM-generated explanations for advanced quantum and astrophysical phenomena.

- Design structured prompts and datasets for assessing AI reasoning in scientific applications.

- Support AI research projects focusing on computational accuracy and simulation fidelity.

Graduate Research Assistant – Computational Physics and Quantum Systems Group
Michigan State University – East Lansing, MI
Aug 2021 – Dec 2023

- Conducted large-scale simulations of quantum particles using deep learning frameworks.

- Designed and implemented AI models that predict wave function collapse behavior.

- Developed structured datasets for LLM evaluation on physics-specific reasoning tasks.

- Presented findings at the American Physical Society (APS) annual meeting.

Physics Research Intern – NASA Goddard Space Flight Center
Greenbelt, MD | May 2020 – Aug 2020

- Contributed to cosmic radiation research and model development using Python and MATLAB.

- Collaborated with astrophysicists on AI-driven data interpretation for solar activity prediction.

- Improved simulation accuracy of cosmic ray propagation by integrating machine learning models.

Teaching Assistant – Department of Physics
Stanford University, Stanford, CA
2019 – 2021

- Led undergraduate physics labs in Mechanics and Electromagnetism.

- Guided students in using computational tools (MATLAB, Python) for problem solving.

- Developed simulation-based exercises to reinforce theoretical understanding.

SELECTED PUBLICATIONS

- Kearney, J.M., *"AI-Assisted Quantum Reasoning for Predictive Physics Models,"* **Nature Physics**, 2024.

- Kearney, J.M., *"Neural Simulations in Quantum and Astrophysical Systems,"* **Physical Review Letters**, 2023.

- Kearney, J.M., *"Evaluating Large Language Models in Scientific Reasoning,"* **Journal of Computational Physics**, 2022.

KEY SKILLS

Physics Specialties: Quantum Mechanics, Astrophysics, Thermodynamics, Particle Physics, Computational Physics
AI & Programming: Python, TensorFlow, PyTorch, MATLAB, Fortran, C++, NumPy, SciPy
Simulation & Tools: COMSOL Multiphysics, Simulink, Mathematica, JupyterLab
Core Strengths: Data Analysis, Prompt Engineering, LLM Evaluation, Simulation Design, Research Writing

PROJECT HIGHLIGHTS

AI-Driven Quantum Data Framework – Michigan State University (2023)

- Developed machine learning algorithms to simulate quantum state transitions.

- Created benchmark datasets for LLM training and evaluation on physics-based queries.

Astrophysical Simulation with AI Integration – Harvard Research Lab (2024)

- Modeled stellar dynamics and light propagation using deep neural networks.

- Enhanced LLM accuracy in interpreting astrophysical data by 20%.

AWARDS & HONORS

- **MSU Graduate Research Fellowship in Physics & AI**, 2023

- **Stanford Innovation in Data Science Award**, 2021

- **Harvard University Academic Excellence Medal**, 2019

PROFESSIONAL AFFILIATIONS

- American Physical Society (APS)

- Institute of Electrical and Electronics Engineers (IEEE)

- American Association for Artificial Intelligence (AAAI)

- Association for Women in Science (AWIS)