

# Kallie McLaren

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(208) 534-1739

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## Education:

**Idaho State University, Pocatello** Graduated: December 2024, GPA: 3.96

Master of Science in Computer Science

Thesis: The Viability of Trojan Attacks on Machine Learning Models and Defense Mechanisms

**Idaho State University, Pocatello** Graduated May 2023 Summa Cum Laude and Honors Distinction, GPA: 4.0

Bachelor of Science in Statistics and Applied Mathematics and a minor in Computer Science

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## Relevant Coursework:

### Idaho State University Courses:

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| • Advanced AI Methods                  | • Scientific Computing                                  |
| • Data Science and Machine Learning    | • Advanced Object Orientated Programming                |
| • Applied Neural Networks              | • Social Issues and Professional Practices in Computing |
| • Databases                            | • System Programming and Assembly                       |
| • Introduction Informatics Analytics   | • Data Structures and Algorithms                        |
| • Advanced Algorithms                  | • Computer Science and Programming I                    |
| • Cybersecurity and Resilience         |   |
| • Introduction to Software Engineering |   |

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## Technical Skills:

**Computer Languages:** Python, R, C++, Java, C#, ARM

**Google Colab:** Experience using Colab to execute code

**Database Experience:** SQL, Oracle, Firestore

**Nuclear Data for Machine Learning Models**

**Machine Learning:** Pytorch, Keras, Tensorflow, Pandas, Sklearn

**Cyber Skills:** Trojan Attacks on Machine Learning Models

**Tableau:** Experience building reports and graphs in Tableau

**Power BI:** Some experience in building reports and graphs in Power BI

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## Experience:

**Statistics Adjunct Professor** Idaho State University

August 2024 – December 2024

Teaching Statistical Reasoning MATH 1153P at Idaho State University

**Manufacturing Engineer Intern** Micron Technology

May 2024 – August 2024

Created a report from SQL in Tableau for wafer process history

Wrote queries from two different servers and joined within Tableau

Used Microsoft SQL Server and Oracle for the queries

**Graduate Teaching Assistant** Idaho State University

January 2024 – May 2024

Teaching Statistical Reasoning Math 1153P at Idaho State

**Graduate Research Assistant** Idaho State University

August 2023 – Dec 2023

**Nuclear Cybersecurity Intern** Idaho State University

May 2022 – Dec 2023

Using Python/Pytorch to implement a Trojan attack on nuclear machine learning models

Testing the viability of this attack on nuclear data

Work done for GRA

*Publication Anticipated*

**ExaSMR Intern** Idaho State University

July 2020 – August 2021

Wrote programs in C++ to implement Zernike and Legendre polynomials to model flux over a fuel pin

Worked with a team to finish this project alongside Dr. Leslie Kerby

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### Papers

**K. McLaren**, Dr. P. Mena, E. Hill, E. Elzinga, C. Spirito, and Dr. L. Kerby. Exploring the Viability of Trojan Attacks on Nuclear Machine Learning Models. volume 128, pages 613–616, June 2023.  
(American Nuclear Society Annual Meeting 2023)

E. Hill, P. Mena, **K. McLaren**, E. Elzinga, C. Spirito, and L. Kerby, Examining the Potential for Adversarial Reprogramming Cyber Attacks on Nuclear Machine Learning Systems Utilizing 1 Iterative FGSM, International Conference of Mathematics and Computational Methods Applied to Nuclear Science and Engineering (2023), accepted.  
(M&C 2023)

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### Community Engagement:

Volunteer with community events and church group

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### Honors and Awards:

**Idaho State University Dean's List** Fall 2019 – May 2023

**Idaho State University Honors Program** Fall 2019 – May 2023