

# Jacob McCabe

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[Personal Website](#) | [LinkedIn](#)

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## Technical Skills:

**Technology:** Python • R • C • C++ • Java • SQL • Git • PowerBI • NumPy • SciKit-Learn • TensorFlow

**Quantitative:** Machine Learning • Time Series Analysis • NLP • Mathematical Modeling • Supervised Learning • Unsupervised Learning • Optimization • SVMs • Neural Networks • Regression • LSTM • K Means • KNN • Decision Trees • Random Forests • GLMs

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## Education:

*B.S. Computer Science*, Western Washington University, June 2023 (Major GPA: 3.73)

*B.S. Applied Mathematics*, Western Washington University, June 2023 (Major GPA: 3.84)

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## Professional Experience:

**Research Assistant - PISCES International & WWU**

July. 2022 – June 2023

- Trained and tested a logistic regression model in R able to predict student success with 75% accuracy.
  - Performed data analysis and feature engineering to eliminate some of the random noise and reduce the dimensionality of data.
  - Wrote technical reports such as a research proposal, project plan, research paper, and data documentation.
  - Communicated results, future applications, and suggested improvements to department staff and students.
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## Portfolio:

### [Improving Education of Security Operations Center Analysts](#)

- Make a supervised learning model to predict the resolution time of tickets flagging suspicious network traffic to improve the education of SOC Analysts.
- Trained a logistic regression model able to predict ticket resolution time with 75.39% accuracy, 85.33% F-1 Score, 92.24% Recall, and 79.39% Precision.

### [Technical Stock Analysis with LSTM](#)

- Create a LSTM model to forecast stock market closing prices for General Electric, using a Simple Moving Average and Exponential Moving Average as benchmark models.
- With little training, the LSTM model was able to forecast stock prices - scoring RMSE = \$1.74 and MAPE = 1.99% on test data, outperforming benchmark models by 290%.

### [Bank Marketing Analysis](#)

- Determine a way to determine which subset of clients are more likely to subscribe to a term deposit from a banking institution's direct marketing campaign.
- Trained several supervised classification models, and chose the model with the highest F-Score on the test set. Accuracy = 89.9%, F-Score = 0.549 (beta = 0.5).

### [Machine Learning Algorithms](#)

- Demonstrate usage of various machine learning algorithms including K-Means, K-Nearest Neighbors, Support Vector Machines, Neural Networks, Decision Trees, Random Forests, and Boosted Tree Ensembles using Scikit-Learn and Tensorflow.