

# Thomas Braun

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## EDUCATION

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### University of Nevada, Reno

Aug 2021 - May 2025

*B.S. in Computer Science and Engineering, Minor: Statistics*

- **Coursework:** Machine Learning, Artificial Intelligence, Data Mining, Big Data, System Admin
- **Statistics:** Probabilistic Analysis, Multiple Linear Regression Analysis, Data Visualization

## EXPERIENCE

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### Computer Scientist I - JT4

Jul 2025 - Present

*Las Vegas, Nevada*

- Created unit tests via MSTest to support code quality
- Collaborated with teammates while adhering to strict security requirements

### Undergraduate AI Researcher - UNR

Aug 2024 - May 2025

*High Performance Computation & Visualization Lab*

- Worked with Retrieval-Augmented Generation (RAG) pipeline & **LangChain** to send context consisting of PDF's, code & parameters to local LLM via ollama, later utilized OpenAI API calls
- Created code extraction module to parse models by their source code for context in AI model categorization
- Wrote weights & biases extractors for ONNX, Tensorflow & Protobuf file types to provide further categorization context from network parameters

## PUBLICATIONS

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### N-CATS: Neural Network Classification Automatic Taxonomy System

June 2025

*2025 IEEE/ACIS International Conference*

- Presented work from research in ATC - structured classification of AI models
- Utilizing defining facets of an AI model (use case, learning type, optimization techniques) created structured collection of models with automated insertion
- Provided visualizations (Neo4j) to view the anatomy of an artificial neural network by its layers, neurons and associated parameters

## PROJECTS

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### Aircraft Detection from Satellite Imagery | *Python, PyTorch, Scikit-learn*

Nov 2024

- Built & trained model from dataset of 32,000 images by designing a CNN that achieved 97% validation accuracy on 8,000 samples
- Model found & segmented aircraft given a scene (*image capturing 6 m<sup>2</sup>*)
- Optimized model for efficient evaluation & performance by reducing model complexity while maintaining accuracy, & exploring parallel algorithms for evaluation

## SKILLS

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**Programming Languages:** Python, C#, C++, C, R, PostgreSQL

**Frameworks:** MSTest, Pydantic, ollama, PyTorch, LangChain, PySide

**Software Development:** Linux, Git, GitHub, Docker, APIs

**Data Science:** Data Preprocessing, Statistical Analysis, Feature Engineering, Exploratory Data Analysis

**Visualization:** Microsoft Power BI, Matplotlib, Tableau, Microsoft Excel

## ACHIEVEMENTS

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- 2025 Capstone Project Instructor's Choice
- Dean's List
  - \* Fall 2021, 2023, 2024
  - \* Spring 2023, 2024, 2025

*References upon request*