# Alan Zhou

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## Education

**McMaster University** Hamilton, ON

*Bachelor of Science in Computer Science, Minor in Statistics* *Sep. 2022 – Jun 2027*

- Relevant Courses: OOP, Data Structures and Algorithms, Databases, Software Testing, Applications of Machine Learning, Natural Language Processing, Data Science, Data Mining, Discrete Math, Statistics, French Language
- GPA: 3.6/4.0

## Experience

**Prompt Engineer and Instructor** Oct. 2024 – Present

*Outlier AI* *Toronto, ON*

- Developed transitional plans and outlined opportunities for academics to experiment with incorporating large language models into their workflow
- Curated and optimized prompts to best adjust sentimental and instructional weight in LLM prompts
- Analyzed and enhanced query results with a custom sentiment analysis script in Python using the Transformers API and Huggingface

**Summer Coding Instructor** Jul. 2024 – Aug 2024

*Skill Samurai* *Mississauga, ON*

- Organized and instructed computer science course for academically inclined and underprivileged youth over the span of 8 weeks
- Developed and executed lesson plans helping students create a small coding project deliverable at the end of the week, placing great emphasis on core programming fundamentals and data structures and algorithms

**Poker Player** Dec. 2023 – Aug 2024

*Freelance* *Mississauga, ON*

- Developed a winning poker strategy using Game Theory Optimal principles, expected value analysis, and Bayesian inference to make mathematically sound decisions in high-stakes situations, surpassing $15,000 in profit one month
- Implemented Monte Carlo simulations in Python using Numpy to evaluate hand equities, calculated pot and implied odds to optimize risk-reward decisions, adapting strategy dynamically based on opponent behavior and statistical trends.

## Projects

**Amazon Review Insights - Multi-Label Classification** | *Python, NLTK, Scikit-learn, Pandas* Jan 2025

- Built a multi-label classification model to classify Amazon customer reviews into six key categories: Product Quality, Shipping, Price, Usability, Customer Service, and Aesthetic Appeal.
- Leveraged the Amazon US Customer Reviews Dataset from Kaggle, comprising over 4,000 reviews, and manually labeled each review to develop a high-quality, annotated training dataset customized for the classification task.
- Applied NLP techniques, including tokenization, stemming, and TF-IDF for feature extraction.

**Charting Exoplanet Habitability - A Celestial Classifier**

| *Python, PyTorch, NumPy, Scikit-learn, pandas, Neural Networks, Machine Learning* Oct 2024 – Dec 2024

- Developed a Neural Network-based model to classify exoplanets as habitable, non-habitable, or unknown, achieving a 90% accuracy with efficient training in 150 epochs.
- Leveraged advanced frameworks and libraries to ensure efficient and scalable implementation, including Python, PyTorch, NumPy, Scikit-learn, and pandas for data preprocessing, feature extraction, and model development.

**Deltahacks X: One Bad Apple** | *Node.js, Typescript, Tensorflow, Python, Flask* Jan 2024 – Jan 2024

- Developed an application to classify the safety level of eating particular fruit, addressing the United Nations call to action for good health and wellbeing, by leveraging Keras to optimize model and reduce overfitting
- Implemented function on frontend response to accept file uploading and image detection

## Technical Skills

**Languages**: Java, Python, C#, C/C++, SQL, Linux, Bash, Verilog, JavaScript, HTML, R, MATLAB, Haskell, SAS
**Frameworks**: React, Node.js, Angular, Flask, Django, JUnit, Kubernetes, Scrum
**Developer Tools**: Git, Docker, Google Cloud Platform, AWS, MS Azure, Confluence, PowerBI, IntelliJ, Eclipse, Redis
**Libraries**: pandas, NumPy, PyTorch, Tensorflow, Keras, sklearn, Matplotlib, plotly, seaborn