

Nathan Loh

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Summary

Highly motivated and detail-oriented individual with background in computer science and AI. Demonstrates exceptional planning and problem-solving skills, consistently meeting key deadlines while exhibiting strong written and verbal communication skills. Experienced in validating data accuracy and developing verification systems for machine learning projects. Adept at leading teams to collaborate and achieve key tasks and goals. Passionate about applying technical skills to enhance quality and reliability.

Skills

Technical Skills:

- **Programming Languages:** Python, PostgreSQL, R, C, Java, Assembly, OCAML
- **Tools:** Tensorflow, Keras, Scikit-Learn, PyTorch, NLTK, NumPy, Pandas, Git, HTML, Microsoft Office Suite, Google Suite, Android Studio
- **Data Analysis & Validation:** Data Preprocessing, Feature Engineering, Data Transformation, Model Validation, Performance Evaluation

Soft Skills

- **Communication:** Verbal and Written Communication Skills, Technical Documentation, English (*fluent*), Chinese (*fluent*)
- **Collaboration:** Teamwork, Project Management, Adaptability, Leadership, Agile Development
- **Problem-Solving:** Analytical Thinking, Critical Thinking, Data Analysis, Systematic Testing, Innovation & Creativity

Projects

Predicting COVID-19 Algorithms:

Sep 2022 – Nov 2022

- Evaluated multiple machine learning models (linear regression, logistic regression, decision trees, and k-nearest neighbors) using Scikit-learn to optimize predictive accuracy before performing systematic testing to compare model accuracies.
- Designed and tested hybrid algorithmic approaches that improved accuracy at the cost of runtime, achieving accuracies over 97%.
- Documented testing methodologies and validation procedures to ensure reproducibility.

Fingerprint Detection and Recognition:

Apr 2023 – May 2023

- Developed and trained a Convolutional Neural Network (CNN) model in Python using Keras/Tensorflow to classify fingerprint images, ensuring high identification accuracy.
- Optimized the model for robustness by handling various altered fingerprint images, leading to a 100% accuracy rate on the test set.
- Built an application using Android Studio to perform second-factor authentication using fingerprints.

Wildfire Detection from RGB Images using CNN, Transformer, and Hybrid Models:

Sep 2023 – Nov 2023

- Developed various wildfire detection models: Convolutional Neural Networks (CNNs), a Transformer (ViT), and a Hybrid model that combines a pre-trained CNN and Transformer architecture through Python.
- Validated model functionality and conducted comparative analysis on model performance using datasets from different sources.
- Augmented the dataset with additional images to mitigate data scarcity and improve model robustness, ensuring comprehensive test coverage and enhanced generalization.

NBA Data Analysis:

May 2024 – Jun 2024

- Conducted statistical analysis of player and team performance across multiple NBA seasons using R programming language, identifying trends and key performance indicators.
- Applied data manipulation and feature engineering techniques to refine predictive moves and improve forecasting accuracy.
- Trained a Random Forest model to simulate NBA playoff outcomes, predicting team advancements based on historical game data.

Coffee Shop Application:

Aug 2021 – Dec 2021

- Developed a database-driven application using PostgreSQL, Android Studio, and Java to analyze inventory, sales, and revenue for a simulated coffee shop business.
- Designed and implemented a database system to monitor product performance, generate financial summaries, and manage inventory.

Work Experience

Data Entry Clerk:

Jun 2021 – Aug 2021

Future Vantage LLC

Darien, IL

- Managed and updated shipping documents for plastic resin imports and exports using Microsoft Access, ensuring data validation for management forecasting, optimized inventory planning, and route efficiency.
- Tracked and updated shipping fees of international shipping lines to ensure cost-saving and efficient freight movement for company to analyze price trends and transportation costs.

Education

Illinois Institute of Technology, Chicago, IL

Master of Science, Artificial Intelligence, GPA 3.70/4.00

Jan 2022 – Dec 2023

Bachelor of Science, Computer Science. GPA 3.87/4.00

Aug 2019 – Dec 2023

Relevant Courses: Machine Learning, Deep Learning, Advanced Artificial Intelligence, Natural Language Processing, Computer Vision, Data Mining, Advanced Database Organization, Data Privacy and Security, Software Engineering, Algorithms

Honors and Achievements

Dean's List at Illinois Institute of Technology (Nine Semesters):

Aug 2019 – Dec 2023

Camras Scholars Program (CSP)

Aug 2019 – Dec 2023

Summa cum laude

Dec 2023