Zunbo Yang

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EDUCATION

Master of Science in Computer Information Systems, *concentration in* **data analytics,** *Sep 2021 - Jan 2023*
Boston University
Bachelor of Science (B.S.) *in* ***Business Administration,*** *Concentration in* ***Finance*** *and* ***International Business,***
Additional Major *in* ***Computer Science, Minor*** *in* ***Mathematics*** *Sep 2017 - May 2021*
University of Massachusetts Lowell
Commonwealth Honors Student, Multiple Dean's List

RELEVANT WORK EXPERIENCES

Software Development Intern, *GTSP – Santa Clara, CA* *Apr 2023 – Present*

- **Enhanced Trading Algorithms:** Refined a **neural network model** to develop a trading bot that outperformed market benchmarks consistently.
- **Application Development:** Engineered a **Python**-based stock screener application integrated with the trading bot, featuring a **PyQt6.5** user interface.
- **Analytical Tools Design:** Developed a stock analytics framework for momentum trader clients, utilizing a proprietary scoring system with Talib functions, and metrics like MACD and the ADX indicator to optimize stock selection for clients' trading strategies. Added paper trading functionality for the trading bot using **InteractiveBrokers API**.
- **API Integration and Database Management:** Led the integration of the **Interactive Brokers TWS API** for our trading bot to streamline data processes and developed a **SQLite** database to minimize API usage and improve operational efficiency of the trading system.

Equity Research Intern, *Tigress Financial Partners LLC – New York, NY* *Jan 2021 – Feb 2021*

- **Market Research Execution:** Managed the creation and distribution of detailed market research reports, leveraging analytics and real-time news across various financial markets. Monitored earnings calls, producing summarization reports with advanced text mining techniques to aid decision-making.
- **Industry Analysis:** Performed extensive comparative research on electric car manufacturers in the U.S. and China, creating a detailed public comparables table to refine research methodologies utilized techniques like **text mining** etc.
- **Valuation Modeling:** Developed and evaluated valuation models for top electric vehicle companies using **Excel** and **R**, ensuring accurate market assessments and supporting strategic investment decisions.

PROJECTS

Top-Down Auto Shooter Game Development (Unreal Engine 5, C++) *Dec 2023 – Present*

- **Gameplay Mechanics Implementation:** Led the development of a dynamic top-down auto shooter game using **Unreal Engine 5** and **C++**, focusing on intuitive gameplay mechanics and a sophisticated player **GameplayAbilitySystem**.
- **AI and Enemy Design:** Crafted complex enemy AI with **behavior trees**, enabling nuanced behaviors like pursuit, attack, and evasion, dynamically responding to player actions.
- **Performance Optimization:** Resolved significant performance issues in rendering large numbers of AI characters by implementing **optimization algorithms and rendering techniques,** enhancing frame rates and game fluidity.
- **Level and UI Development:** Created comprehensive game levels with strategic placements and obstacles to deepen gameplay. Developed an intuitive user interface, including an equipment management system.

Crime in New York City Data Analytics (classification with Bayes, J48, Hoeffding Tree and IBK) *Jan 2022 – May 2022*

- **Data Preparation:** Preprocessed NYPD complaint data using **Python** and **R Studio**, creating accurate datasets for **predictive analysis.**
- **Algorithm Implementation:** Applied multiple **classification** algorithms (Bayes, J48, Hoeffding Tree, and IBK) in **R Studio** and **Weka** to enhance predictive accuracy and generate insights.
- **Model Evaluation:** Interpreted classification outcomes and refined models using attribute selection techniques to boost reliability and insights.
- **Performance Analysis:** Performed detailed assessments of **machine learning** models with **confusion matrices** and visualization tools in **Weka**, optimizing algorithms for crime pattern analysis.

Gomoku Game with Adjustable AI difficulties (AI development with Python) *Sep 2020 – DEC 2020*

- **Game Development:** Engineered a multiplayer Gomoku game using Python and Pygame, supporting both local multiplayer and AI-enhanced gameplay.
- **AI Implementation:** Developed a competitive AI using the **Minimax** algorithm, providing robust solo gameplay and strategic depth.
- **Customization Features:** Implemented an AI difficulty adjustment feature, allowing players to customize game challenges based on skill levels, thus improving engagement and accessibility.
- **Performance Optimization:** Optimized the game loop and implemented depth caps to ensure fluid gameplay across varying AI search depths.

RELEVANT SKILLS

Data Analytics: Machine Learning, Artificial Intelligence, Data Mining, Predictive Modeling, Classification, and Natural Language Processing.
Programming Languages: SQL, Python (Pandas, PyTorch, TensorFlow, BERT, PyQt, KeyBERT), R, C/C++, HTML, PHP, Javascript etc.
Development Tools and Platforms: MySQL, R Studio, Git, AWS, UnrealEngine 5, Weka, Linux(Ubuntu), Visual Studio, Microsoft Office etc.