Liming (Bruce) Luo

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Education

Northwestern University **(Expected) Sep 2024 - Dec 2025**
M.S. Computer Engineering

University of California, Berkeley **Aug 2019 - Aug 2022**
B.A. Data Science | B.A. Computer Science (Minor)

Relevant Coursework: *Computer Security · Database Systems · Machine Learning · Artificial Intelligence · Computer Architecture · Efficient Algorithms & Intractable Problems · Data Structures · Structure & Interpretation of Computer Programs · Industrial Systems · Probability of Data Science · Principle & Techniques of Data Science · Discrete Math*

Skills

Languages: Java · Python · C++ · Golang · Scala · SQL · MATLAB · React · Rust · Angular · Html · CSS · JavaScript

Tools: AWS · VM · Restful · Git · PHP · REST · Spark · Kafka · Docker · Linux · MySQL · ETL · TensorFlow · PyTorch

Professional Experience

University of Cambridge Bio-inspired Robotics Lab | Cambridge, UK **Jan 2024 - Mar 2024**
Researcher [Python, Java, MATLAB]

- Proficient in ROS (Robot Operating System) for software development and integration in robotic applications.
- Actively engaged in academic research on machine learning techniques, focusing on deep learning and reinforcement learning to enhance robot decision-making and autonomy.
- Skilled in machine learning algorithm design and software development using Python, Java and MATLAB.
- Explored reinforcement learning methods tailored for quadrupedal robots to enhance locomotive and navigational proficiency for human rescue missions in natural disasters.

CL Whole Sale Group LLC | San Jose, CA **Oct 2022 - Apr 2024**
Data Scientist [SQL, Python, Tableau]

- Conducted A/B testing and data analysis on various advertising strategies, resulting in a 12% improvement in turnover.
- Developed a predictive model to forecast sales price trends. Effectively managed 70% of surplus inventory, optimizing inventory turnover and reducing storage costs.
- Employed Random Forest models to effectively handle multivariate data and nonlinear relationships, optimizing inventory demand predictions through hyperparameter tuning and cross-validation. Achieved an 18% increase in demand prediction accuracy and a 9% improvement in overall dealership profits.
- Collaborated with cross-functional teams to ensure data-driven decision-making across departments.

UC Berkeley Undergraduate Research Apprentice Program (URAP) | Berkeley, CA **Aug 2021 - Dec 2021**
Undergraduate Researcher [Python, Matplotlib]

- Utilized Python to conduct web scraping of Twitter data through the unofficial API, extracting posting time, content, and geolocation details efficiently.
- Analyzed the influence of controversial hashtags such as #RefugeesWelcome and #BLM on voter sentiments and electoral results during the 2021 German elections, providing valuable insights.
- Demonstrated proficiency in data-driven research by employing advanced predictive analysis techniques, including time series analysis and sentiment analysis, to forecast future growth and trends effectively.

Projects

End-to-End Encrypted File Sharing System: [Golang] **June 2022 - Aug 2022**

- Developed a Dropbox-like file-sharing system with end-to-end encryption, leveraging cryptographic techniques to prevent unauthorized access and tampering by servers.
- Implemented secure user authentication and session management mechanisms to enable seamless registration and login across multiple sessions.
- Enhanced collaborative file operations such as storage, retrieval, sharing, and revocation, ensuring efficient and secure data handling in potentially insecure communication channels.

Database: [Java] **Aug 2021 - Dec 2021**

- Implemented a B+ tree for bulk loading of dynamic multi-level database file indexes
- Accomplished iterator and join algorithms, including PNLJ, BNLJ, sort-merge join and grace hash join
- Utilized dynamic programming algorithm used in Selinger optimizer to estimate costs, maintain statistics, and search for the best query plan by System R dynamic programming
- Implemented concurrency of the queuing system of page-level lock APIs for lock manager, distributed transaction and multi-granularity locking with strict 2PL and ARIES recovery protocol to preserve ACID properties
- Achieved write-ahead logging and support for checkpoints, rollbacks, and ACID-compliant restart recovery