

# Jiawei Chen

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## EDUCATION

University of California, Berkeley  
B.A. Computer Science

Aug 2022 - May 2024  
Berkeley, CA

## WORK EXPERIENCE

### Robotics Engineer

VisionNav Robotics

Oct 2024 - Present

Atlanta, GA

- Deploy and fine-tune autonomous forklifts (AGVs) and optimize path scheduling, boosting client's factory efficiency by 30%.
- Train YOLOv5 deep learning model for real-time detection of forklifts, humans, and goods to enhance warehouse safety.
- Configure Robotics Control System for task allocation, robot coordination, and integration with Warehouse Management System (WMS).

### Research Assistant

Kennesaw State University, Dr. Yixin Xie's Lab

Sep 2022 - Oct 2024

Kennesaw, GA

- Apply and Optimize Machine Learning Algorithms (random forest, GNN, etc.) for biological data analysis.
- Write Scripts to perform Molecular Dynamic simulations, increasing traditional workflow efficiency by 80%.
- Develop and maintain the lab website using Docker for containerization and SSH for secure remote management.

## PROJECTS

### Machine Learning Projects (Python)

Jul 2023 - May 2024

- Developed a Convolutional Neural Network (CNN) to classify CIFAR-10 images with 85.3% accuracy, ranking in the top 3% in Kaggle competition.
- Performed data cleaning and feature engineering, built a Random Forest model to predict Titanic survival with 82% accuracy, ranking in the top 5% in Kaggle competition.
- Implemented Recurrent Neural Network (RNN) and Neural Network to classify digits and language identification.

### Database Management System (Java)

Mar 2024

- Implemented a **distributed database system** with lock-based concurrency control mechanism to manage multiple transactions concurrently, incorporating 2-Phase Commit (2PC) and 2-Phase-Locking (2PL).
- Worked on indexing mechanisms and SQL query optimization, leading to a 20% improvement in performance.
- Implemented the ARIES recovery algorithm to ensure robust database recovery and fault tolerance.

### Pac-Man AI (Python)

Sep 2023 - Dec 2023

- Developed advanced artificial intelligence algorithms (A\*, Markov Decision Process, Reinforcement Learning, and Machine Learning) to optimize Pac-Man's path in the maze for efficient pellet collection while evading ghosts.
- Implemented Bayes Nets and Hidden Markov Models to accurately track the position of ghosts using noisy sensor data, and utilized Particle Filtering to enhance Pac-Man's decision-making process under uncertainty.

### File Sharing System (Go)

Jul 2023

- Implemented RSA authentication for user logins and HMAC with SHA-256 to tag critical data, maintaining data integrity.
- Utilized AES encryption to securely store and transfer files, ensuring data confidentiality.

## PUBLICATIONS

- Chen, J.**, Chen, L., Quan, H., Lee, S., Khan, K. F., Xie, Y., ... & Xie, Y. (2024). A Comparative Analysis of SARS-CoV-2 Variants of Concern (VOC) Spike Proteins Interacting with hACE2 Enzyme. *International Journal of Molecular Sciences*, 25(15), 8032.
- Chen, J.**, Potlapalli, R., Quan, H., Chen, L., Xie, Y., Pouriye, S., ... & Xie, Y. (2024). Exploring DNA Damage and Repair Mechanisms: A Review with Computational Insights. *BioTech*, 13(1), 3.

## TECHNICAL SKILLS

**Programming Languages:** Java, C/C++, Python, Go, Assembly Language, Shell Script

**Frameworks and Tools:** AWS, Kafka, Spring Boot, Docker, Git, SQL, NoSQL (MongoDB), Linux, HTML/CSS

**Others:** Agile Methodology, CI/CD, RESTful API, System Design, Matplotlib, Tableau, Scikit-learn, pandas, NumPy, PyTorch