Zhuoyue (Joey) Wang

(217)-979-3885 | zhuoyue_wang@berkeley.edu | 450 W 42nd St, New York, NY 10036 | https://www.linkedin.com/in/zhuoyuewang/ |
https://scholar.google.com/citations?user=hCWelZ0AAAAJ&hl=eng

SUMMARY

Experienced **Senior Software Engineer** with over 5 **years of industry experience**, including **1 years** as a **Team Lead**. Skilled in **managing** software development lifecycle, **designing** technical roadmap, and specializing in **database kernel** development with strong **system infrastructure** background. Involving in **machine learning** projects and published **11 AI/ML** papers in journals and conferences. Holds a master's degree in Computer Science and has conducted over **40** reviews for journal and conference papers. Contributed as a judge in international awards and hackathons.

EDUCATION

University of California, Berkeley — GPA: **3.72/4.0**
Master of Engineering in Electrical Engineering & Computer Science

University of Illinois at Urbana-Champaign — GPA: **3.91/4.0**
Bachelor of Science in Computer Science

CURRENT WORK EXPERIENCE

Senior Member of Technical Staff — *July 2020 –*
Oracle — New York City, NY

- **Tech Stack**: **C programming language** for database kernel development in **Linux**, with expertise in crafting testing scripts using **Python** and **SQL**.
- **Leadership: Team Lead (1 years of experience)**
  - **Led junior engineers**, managing the software development lifecycle for **5+** projects, delivering high-quality database space management solutions.
  - Actively involved and lead product, technical architecture, and strategic leadership planning decisions for the Oracle Database **23ai** and **24c** products to help build long term strategy for the service.
  - Mentored junior engineers, supporting their professional development and project execution.
- **Focus Areas: In-memory Database** (**Persistent Memory Storage**) + **Oracle Database** (**Space Management**)
  - Code owner of **Persistent Memory Management,** Data Object **Recyclebin Architecture**, **Space Management Coordinator** and **System Monitor** background infrastructures**.**
  - Designed and implemented reliable, performant **memory allocation/deallocation** routines with **multi-thread/multi-instance concurrency and recovery** support at **terabyte scale**.
  - Developed critical memory management background solutions, including **memory defragmentation** (**patent pending**), deferred memory clearing, RDMA region extend, and log/user data region rebalancing.
  - Integrated **AI vector search** features in Space Coordinator to facilitate seamless handling of new vector data and index types in space operations.
  - Maintained System Monitor in proactive space allocation and reclamation for instance and data recovery.

SELECTED PUBLICATIONS

Integrated method of deep learning and large language model in speech recognition
2024 IEEE 7th International Conference on Electronic Information and Communication Technology
- Developed a novel framework combining **DNN**, **CNN**, **LSTM** networks, and **large language models** (Transformer, BERT, and GPT) to enhance speech recognition accuracy and real-time performance.
- Demonstrated significant improvements in Word Error Rate and Real-Time Factor across diverse datasets (TIMIT, LibriSpeech, Common Voice), achieving notable gains in multi-language adaptability and handling of accent variations.

Deep Learning Solutions for Pneumonia Detection: Performance Comparison of Custom & Transfer Learning Models
2024 8th International Conference on Computing, Control and Industrial Engineering
- Preprocessed a dataset of 5,856 pediatric chest X-ray images to ensure robust model training and validation.
- Performed a comparative evaluation of deep learning architectures, including **custom CNNs** and **transfer learning** techniques using ResNet152V2, for effective pneumonia detection.
- Assessed model performance using various metrics, demonstrating the fine-tuning strategy's **90% testing accuracy**

PUBLICATION LIST

Graph Neural Network Recommendation System for Football Formation (4th Author, Citation Count: 81)
Applied Science and Biotechnology Journal for Advanced Research

Research on Image Super-Resolution Reconstruction Mechanism based on Convolutional Neural Network (4th Author, Citation Count: 27)
2024 4th International Conference on Artificial Intelligence, Automation and High Performance Computing

Research on Autonomous Robots Navigation based on Reinforcement Learning (3rd Author, Citation Count: 26)
3rd International Conference on Robotics, Artificial intelligence and Intelligent Control

Predicting Stock Prices with FinBERT-LSTM: Integrating News Sentiment Analysis (4th Author, Citation Count: 22)
2024 8th International Conference on Cloud and Big Data Computing

Neural Radiance Fields Convert 2D to 3D Texture *(4th Author, Citation Count: 20)*
Applied Science and Biotechnology Journal for Advanced Research

Deep Learning in Medical Image Classification from MRI-based Brain Tumor Images *(2rd Author, Citation Count: 12)*
2024 IEEE 6th International Conference on Power, Intelligent Computing and Systems

Integrated method of deep learning and large language model in speech recognition (4th Author, Citation Count: 10)
2024 IEEE 7th International Conference on Electronic Information and Communication Technology

Deep Learning Solutions for Pneumonia Detection: Performance Comparison of Custom and Transfer Learning Models (5th Author, Citation Count: 6)
8th International Conference on Computing, Control and Industrial Engineering

Prediction of Daily Climate Using Long Short-Term Memory (LSTM) Model (2nd Author, Citation Count: 2)
International Journal of Innovative Science and Research Technology

Transforming Movie Recommendations with Advanced Machine Learning: A Study of NMF, SVD, and K-Means Clustering (3rd Author, Citation Count: 1)
2024 4th International Symposium on Computer Technology and Information Science

Improved Unet brain tumor image segmentation based on GSConv module and ECA attention mechanism (2nd Author, Citation Count: 0)
The 6th International Conference on Computing and Data Science

REVIEW/JUDGE EXPERIENCE

Program Committee Member	*The 9th International Conference on Data Mining and Big Data*
Editorial Board Member	*Applied Science and Biotechnology Journal for Advanced Research*
Editorial Board Member	*Journal of Data Analytics and Engineering Decision Making*
Editorial Board Member	*Engineering Open Access*
Hackathon Judge	*Technovation Girls (International), June 2024*
Hackathon Judge	*MediHack 2024 (International), July 2024*
Hackathon Judge	*HackMIT 2024 (International), September 2024*
Hackathon Judge	*Columbia University DivHack 2024 (Regional), October 2024*
Award Judge	*Globee Award on American Business (International), June 2024*
Award Judge	*Globee Award for Technology (International), June 2024*
Award Judge	*Golden Bridge Awards (International), June 2024*
Award Judge	*Global Tech Awards (International), September 2024*
Article Review (7)	The 31st International Conference on Neural Information Processing
Article Review (10)	*PeerJ Computer Science*
Article Review (4)	*The 25th International Web Information Systems Engineering conference*
Article Review (3)	2024 *27th International Conference on Pattern Recognition*
Article Review (3)	The 7th International Conference on Internet Applications, Protocols and Services
Article Review (3)	*PeerJ*
Article Review (1)	Journal of Data Analytics Engineering Decision Making
Article Review (3)	*Engineering Open Access*
Article Review (1)	*Journal of Systems Architecture*
Article Review (1)	*Asian Journal of Research in Computer Science*
Article Review (1)	*Discover Artificial Intelligence*
Article Review (1)	*Engineering Applications of Artificial Intelligence*

RESEARCH EXPERIENCE

Research Assistant
National Center for Supercomputing Applications
- Collaborated with Professor Nigel Bosch on an in-depth research project in education analytics, investigating the impact of virtual learning environments on student performance.
- Utilized machine learning techniques to develop predictive models assessing the influence of learning behaviors on academic outcomes. This included rigorous data preprocessing, feature engineering, and model training using tools like Keras, TensorFlow, Pandas, and scikit-learn.
- Contributed to the final internship report, focusing on the integration of machine learning in educational research.

Research Assistant
University of Illinois at Urbana-Champaign - Text Information Management and Analysis Group (TIMAN)
- Conducted research study supervised by Professor Chengxiang Zhai, exploring natural language processing (NLP) applications in education.
- Engineered an advanced automated essay scoring system using modular design principles. Deployed and optimized multiple NLP models to assess student essays comprehensively.
- Integrated module-generated scores to deliver nuanced evaluations of writing proficiency.

PAST WORK EXPERIENCE

Software Engineer
Wayfair   Boston, MA
- Developed internal 3D product scene catalog dashboard (PHP/JavaScript/MySQL), and reworked on the related schemas in catalog system database with 500,000 records, achieving a notable 30% improvement in query efficiency.

Software Engineer
NextCapital   Chicago, IL

- Utilized full-stack technologies (Ruby on Rails, MySQL) to build web pages in the investment portfolio platform.

Software Engineer

Trustwave   Chicago, IL

- Designed and implemented the LogCollection and HashContent components in **C++** for Apache MiNiFi, an open-source framework, improving data flow capabilities in ETL pipelines.
- Integrated Apache MiNiFi, Kafka, Elasticsearch, Kibana and Logstash to enable real-time streaming analytics on files, delivering valuable insights and analysis
- Conducted machine learning and neural network modeling to identify patterns in suspicious files.