

ZHONGYAN (HUGO) LUO

☎ 858-241-4996 ✉ zh1203@ucsd.edu [LinkedIn Profile](#) github.com/zhongyan0721

Education

University of California, San Diego (UCSD)

Sep 2024 - Jun 2026

B.S. in Data Science

San Diego, CA

University of California, Santa Barbara (UCSB) - Transferred out

Sep 2022 - Jun 2024

B.S. in Data Science

Santa Barbara, CA

- **GPA: 3.96/4.00**
- **Coursework:** Machine Learning | Deep Learning | NLP | Statistical Models | Data Structure | Database | Big Data | Distributed system | Cloud Computing | Stochastic Process | Algorithm Design | Computer Graphics

Experience

Transwarp

Jun 2023 – Sep 2023

AI Research Intern

- Implemented a **LoRA**-based fine-tuning pipeline in **PyTorch**; fine-tuned multiple LLMs on **A100 GPU cluster**, improving the accuracy of downstream tasks e.g. financial consultation by 15%. (www.wuya-ai.com)
- Conducted a comparative evaluation of leading LLMs (GPT-4, LLaMA-2, Starcoder etc.) on 20+ **Text2SQL** benchmark datasets using **SQLite3** & **Pandas**, measuring execution accuracy and robustness across complex queries.
- Built a **Retrieval-Augmented Generation (RAG)** data augmentation pipeline by leveraging **OpenAI text embedding** models and **FAISS** vector indexing to retrieve domain knowledge, achieving a 18% increase in accuracy.
- Established a data pipeline based on schema-linking to create 10k+ new training and testing examples to corpus.
- Authored patent “*A method and system for SQL generation based on background knowledge augment*”.

Transwarp

Jun 2024 – Sep 2024

AI Research Intern

- Developed a scalable **synthetic data generation pipeline** based on Evol-Instruct, expanding a 20K dataset to over 100K while achieving a 10% improvement in general task performance.
- Contributed to the design, development, and verification of a sensitive word monitoring feature in AI applications, delivering **5+ key features** and deploying via **CI/CD** pipelines using **GitHub Actions**.
- Designed a multi-layered Explainable AI (**XAI**) architecture, integrating solutions including SHAP, LIME, counterfactual explanation etc. for deep learning models.
- Authored paper “*Exploration and practice of XAI human-machine trust mechanism*”, published on *Big Data Research*.

Zhongfu Information Inc.

Sep 2024 – Mar 2025

Data Engineer Intern

- Implemented an **AWS DataZone**-based mesh architecture, enabling self-service data access for 50+ engineers, which streamlined permission management and accelerated team decision-making by 40%.
- Developed **end-to-end ETL pipelines** with **Spark**, **AWS Glue**, **Redshift** and third-party APIs, processing 100GB+ of data daily to empower the BI team with real-time analytics for data-driven decision-making.
- Deployed data pipelines to production via **AWS CDK**, implementing Infrastructure as Code (IaC) for scalability.

Projects

N-gram Statistical Language Model | *Python, NLP, Web Scrapping*

Feb 2025

- Fetched and tokenized large text corpora using custom Python scripts with **requests** & **regex**.
- Built multiple statistical language models (Uniform, Unigram, N-gram) to handle large text (e.g. Homer's epic) in under 20 seconds.

Heart Disease Prediction Model | *Python, Sklearn, XGBoost*

May 2024

- Engineered multiple heart disease classification models based on health metrics, including **Logistic Regression**, **SVM** and **XGBoost**, achieving a prediction accuracy of 92%.

C++ Path Tracing Render | *C++, Computer Graphics, Offline Rendering*

Apr 2024

- Engineered a path tracing renderer in C++; Implemented sophisticated rendering techniques including Multiple Importance Sampling (MIS), Monte Carlo Algorithm, and microfacet BRDF to simulate realistic light interactions.

Technical Skills

Languages: Python (PyTorch, Scikit-learn, request, PySpark, Pandas, NumPy, Matplotlib), C++, C#, R, Java, Swift
Technologies/Frameworks: Transformers, RAG, PEFT, LoRA, p-tuning, DDP, FSDP, RNN, CNN, LSTM, Hadoop, Spark, Dask, HTML/CSS, JavaScript, Docker, AWS S3, Glue, Redshift, Google Cloud Platform (GCP), PostgreSQL