Xuhui (Daniel) Zhan

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EDUCATION

MS Data Science   Aug 2023 - May 2025 (Expected)
Vanderbilt University, Nashville, TN 3.99/4.0 (Expected)

BS Data Science   Aug 2018 - Jun 2022
Beijing Normal-Hong Kong Baptist University, Zhuhai, CN 3.5/4.0 (First Class Honours, Highest Distinction)

BS Data Science   Aug 2018 - Jun 2022
Hong Kong Baptist University, Hong Kong, CN 3.5/4.0 (Joint Degree with Beijing Normal-Hong Kong Baptist University)

EXPERIENCE

Lead AI Data Science Researcher   Oct 2023 - Present
Vanderbilt University (AINegotiation Lab), Nashville, TN

- Enhanced human-model agreement rate from 30% to 80%, achieving expert-level human coder accuracy.
- Reduced annotation costs from $5,000 to $3 per transcript, significantly improving scalability.
- Trained and tested on 100,000+ transcripts, ensuring robustness across diverse negotiation scenarios.
- Model adopted by researchers and faculty from Peking University, CMU, MIT, Northwestern University, and more.

Graduate Research Assistant   Jun 2024 - Present
Vanderbilt University (Network and Data Science Lab), Nashville, TN

- Pioneered the first deep fusion method for TGAT-LLM integration, surpassing superficial token-based fusion SOTA approaches.
- Trained on large-scale datasets, including 78GB+ Amazon Reviews, ensuring robustness across diverse data distributions.
- Evaluated and refined over 500+ model checkpoints, optimizing structural and pipeline innovations.
- Implemented entirely from scratch, redesigning Hugging Face transformers library for custom knowledge injection.

Professional Research Assistant   Oct 2023 - Jan 2025
Vanderbilt University (College of Arts and Science), Nashville, TN

- Improved classification accuracy from 60% (SOTA) to 97% using Vision Transformers (ViTs) for ancient mortar analysis.
- Trained and tested on 10,000,000+ images, ensuring high generalization across diverse archaeological samples.
- Designed a novel algorithm to estimate sample similarity and ancient mortar movement traces purely from vision input.
- Accelerated sample similarity analysis from months to minutes, drastically enhancing research efficiency.

Graduate Teaching Assistant   Aug 2023 - Present
Vanderbilt University, Nashville, TN

- Statistics tutor for Course Econometrics I for MS Finance Students
- Organizing labs, grading materials, hosting office hours
- Teaching DS 5620: Probability & Statistical Inference, DS 5690: Gen AI in Theory and Practice, DS 3100: Fundamentals of Data Science.

Algorithm Development Engineer   Jul 2022 - Apr 2023
Suzhou AGV Robot Co. Ltd. (Automatic Algorithm Team), Suzhou, CN

- Developed end-to-end ML pipelines for automated warehouse storage detection using computer vision, PyTorch, ONNX, and Django.
- Optimized localization algorithms for AGV robots, deployed using ROS.
- Designed vision-based shelf alignment detection and reinforcement learning-based logistic optimization.
- Established standardized deployment processes and hardware standards, enabling scalable implementation across 100+ factories and warehouses.

SKILLS

Programming Languages	Python, C++, Java, SQL, R, Bash
Machine Learning & Deep Learning	Pytorch, Tensorflow, MXNet, Huggingface transformers, PyG
Big Data & Infrastructure	Spark, Hadoop, MongoDB, Redis, Distributed Training

PROJECTS

StreamSlide: AI-powered PDF to PowerPoint Generator
Automatically creates structured PowerPoint presentations from PDFs | Integrates Google's Gemini API for content extraction and captioning | Customizable prompts, themes, and presentation duration | Vanderbilt 2025

NoSQL ChatBot with Tone Mimicing
Chatbot application using Python and Redis | Integrates OpenAI's language model | Features real-time data retrieval and multi-channel communication | Vanderbilt 2024

Real-time Audio-To-Audio Translation System with Voice Mimicry
Speech translation system that preserves speaker characteristics | Vanderbilt 2024

Crowd Counting via Computer Vision
Non-YOLO based crowd counting method | SOTA in 2022 | BNBU 2022

Data Augmentation & Image Enhancement via Collaborative Filtering
Super-resolution for images inspired by collaborative filtering | Patent Pending | BNBU 2021

AWARDS

Vanderbilt Graduate Teaching Fellowship *Aug 2024, Jan 2025*   Vanderbilt University
Awarded for excellence in teaching; served as a TA for multiple courses with tuition support.

Dean's Honor List *2018-2022*   Beijing Normal-Hong Kong Baptist University
Recognized for maintaining outstanding academic performance across multiple semesters.

Outstanding Graduation Thesis Award *Apr 2022*   Beijing Normal-Hong Kong Baptist University
Honored for producing one of the top-ranked undergraduate theses in the college.

Diamond Leadership Award *Oct 2021*   Beijing Normal-Hong Kong Baptist University
Highest distinction in the Student Leadership Path Program, awarded for exceptional contributions to university societies, student organizations, and leadership initiatives.

CHAMPION – MEN'S 4×100M RELAY RACE *Mar 2021*   Beijing Normal-Hong Kong Baptist University
Won first place in the campus-wide 4×100m relay race, demonstrating teamwork, speed, and athletic excellence.

Outstanding Peer Mentor Award *Oct 2020*   Beijing Normal-Hong Kong Baptist University
Recognized for mentoring first-year students and supporting their transition into college life.

GREATER BAY AREA UNIVERSITY DEBATE COMPETITION – RUNNER-UP *Mar 2019*
Achieved 2nd place in the premier inter-university debate competition across Hong Kong, Zhuhai, and Macau, demonstrating excellence in argumentation and critical thinking.

GOLD MEDAL – 3KM MINI-MARATHON *Nov 2018*   Beijing Normal-Hong Kong Baptist University
Placed 4th out of all competitors in the campus-wide 3km mini-marathon, demonstrating endurance, discipline, and competitive performance.