

# Xuhui (Daniel) Zhan

xuhui.zhan@outlook.com | (617)2514133 | Nashville, TN | <https://xuhuizhan5.github.io>

## EDUCATION

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### MS Data Science

Aug 2023 - May 2025

*Vanderbilt University, Nashville, TN 3.98/4.00 (Graduate Teaching Fellowship)*

### 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

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### Lead AI & Data Science Researcher

Oct 2023 – May 2025

*Vanderbilt University — AI Negotiation Lab, Nashville, TN*

- Built an LLM pipeline that auto-codes negotiation transcripts, cutting per-transcript cost from \$5 000 to \$3 (>99% savings) and boosting human–AI agreement from 30% to 80%.
- Developed a novel algorithm that injects population-level variation into LLM negotiator agents, yielding realistic and diverse subject pools for negotiation studies.
- Lead the full ML lifecycle—from data engineering through Web deployment—while collaborating closely with negotiation scholars and data-science peers.
- Work presented at the 2025 AI Negotiation Summit (Harvard/MIT) and the International Association for Chinese Management Research annual meeting.

### Graduate Research Assistant

Jun 2024 – Present

*Vanderbilt University — Network and Data Science Lab, Nashville, TN*

- Developed a unified multimodal fusion framework integrating vision, graph, and language modalities:
  - **Vision–Language:** Refactored LLaVA architecture, eliminating the projection pre-training stage, resulting in a 25% reduction in training time and halving data requirements while maintaining comparable performance across nine benchmarks.
  - **Graph–Text:** Implemented a Temporal Graph Attention Network (TGAT)–LLM pipeline capable of generating high-quality textual attributes for social networks. Empirically evaluated performance on the Venmo Dataset, with extensive experiments on the Amazon Review Dataset forthcoming.

### Professional Research Assistant

Oct 2023 – Jan 2025

*Vanderbilt University — College of Arts & Science, Nashville, TN*

- Boosted ancient-mortar classification accuracy from 60% to 97% with Vision Transformers on 10M images.
- Invented a vision-only provenance algorithm, reducing similarity-analysis runtime from months to minutes; manuscript in preparation for *Nature Methods*.

### Graduate Teaching Assistant

Aug 2023 – May 2025

*Vanderbilt University, Nashville, TN*

- Lead labs, grade, and tutor 120+ students across four data-science courses.

### Algorithm Development Engineer

Jul 2022 – Apr 2023

*Suzhou AGV Robot Co. Ltd., Suzhou, CN*

- Optimized and automated deployment of ROS-based localization algorithms for Automated Guided Vehicles (AGVs), facilitating efficient rollout to new product lines.
- Developed and shipped an end-to-end vision storage-detection system (YOLO · OpenCV · PyTorch → ONNX · Django) deployed across more than 30 warehouses.
- Standardized deployment pipelines and hardware configurations, enabling streamlined, one-click installations company-wide.

# SKILLS

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Languages	Python, C++, SQL, R, Bash
ML Frameworks	PyTorch, TensorFlow, HuggingFace transformers, PyG, scikit-learn
MLOps & Serving	Docker, ONNX, FastAPI, MLflow, DeepSpeed, Git
Data & Cloud	Spark, AWS, GCP, MongoDB, PostgreSQL, Redis, Neo4j

# PROJECTS

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## 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

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## 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.