Qiucheng Chen

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EDUCATION

Tianjin University, China

Bachelor of Computer Science and Technology Aug 2022 – Expected Jul 2026

- **GPA:** 89.779/100, **Rank:** 26/148
- **Relevant Coursework:** Probability Theory and Statistics (100), Linear Algebra (*94*), Computer Organization and Architecture (95), Computer System Practice (94), C++ Programming Principles (96), Computer Networks Practice (98)
- **Honor and Award:**
  - Academic Achievement Scholarship, 2024 (awarded to the top 0.7% of students)
  - Outstanding Individual for Academic Progress and Advancement, 2024
  - Merit Student scholarship, 2023 (awarded to the top 10% of students)
  - Outstanding Student of Sunshine Sports Initiative, 2023 (awarded to the top 1% of students)
  - Liu Bao Scholarship, 2022 (awarded to the top-scoring student in the National Entrance Exam from each province, representing the top 0.6% of students)

RESEARCH EXPERIENCE

College of Intelligence and Computing, Tianjin University

- LMc (Language and Mind computing) Lab with Dr. Bo Wang Apr 2024 - present
  - Formalized the definition and evaluation criteria of "Valuable Hallucinations" and classified them within existing hallucination taxonomies (intrinsic/extrinsic, factuality/faithfulness)
  - Explored how hallucinations, traditionally seen as detrimental, can be controlled and optimized for creative and problem-solving purposes
  - Combined prompt engineering with reflection techniques to realize "Controlled Innovation"—retaining value-driven fictional content while maintaining factual reliability, without modifying model architectures or large-scale retraining
  - Conducting two key experiments in a human-computer interaction (HCI) project: analyzing decision-making through the Prisoner's Dilemma with LLM and human participants
- Data Driving Failure Diagnosis Project with Dr. Yu Wang Apr 2024 - May 2025
  - Conducted in-depth literature research on Large-Scale Foundation Models (LFMs), focusing on their fundamental methodologies and the effective application of multimodal foundation models in the Industrial Cyber-Physical Systems (ICPS)
  - Addressed the complexity of high-dimensional and interrelated multi-sensor data by leveraging GAT technology to extract correlations between sensors
- Semantic-Guided Periodic Tiling Pattern Generation with Diffusion Models & Symmetry Group Embedding with Dr. Liang Wan & Dr. Di Lin Apr 2025
  - Designed a contour-aware shape matching sub-module (for the project's intelligent Wallpaper Group recommendation system) using IoU as the core metric, evaluating 6 fundamental polygons (rectangle, regular hexagon, etc.) against target image masks to select optimal initial tiling units
  - Enabled seamless pipeline integration: Mapped non-rectangular optimal polygons to corresponding Wallpaper Groups for direct tiling; triggered downstream transformation

selection for rectangles, enabling automation of symmetric structure recommendation

PROFESSIONAL EXPERIENCE

4Paradigm MLE Intern April 2025 – present

Developed solution strategies (including algorithms and models) and conducted cross-sectional analyses for multiple business challenge boards, participated in their preliminary research, and ranked among the **top 10%** in the company's internal challenge board points ranking for a month.

Project: Video Cover Text Integrity Detection for Super-App Video Recommendation

- Curated a high-quality dataset of 10,500 cover images from platforms (Xiaohongshu, Bilibili, Douyin, Kuaishou) containing cover screenshots, integrating PaddleOCR and internal OCR models with confidence-threshold filtering to verify text presence
- Engineered an automated data augmentation pipeline using multi-processed random cropping to generate diverse training samples, paired with manual annotation of text cropping status
- Developed a PyTorch Lightning image classification framework with a ResNet backbone and custom classification head
- Designed training scripts (data processing, dataset splitting, model initialization, checkpointing) and implemented efficient training on multi-GPU environments

Project: Standardized Benchmarking for Large Language Model-Powered Mobile Q&A Systems (iOS, Bilingual: Zh/En)

- Screened, cleaned, and integrated 1.5M+ diverse samples from HuggingFace, constructing a bilingual (Chinese/English) dataset that covers multi-domain linguistic scenarios
- Fine-tuned base models using Supervised Fine-Tuning (SFT) via the LLaMA Factory framework, and merged LoRA (Low-Rank Adaptation) weights with the base model to enhance task-specific performance while maintaining model efficiency
- Performed multi-precision quantization to balance model performance and storage footprint, achieving optimal trade-offs for mobile deployment
- Delivered the top-performing strategy in internal evaluations, with a normalized score of 0.71 and an average response time of only 65ms, ranking 1st among all company strategies for comprehensive performance

WORK IN PROGRESS

[1] **Qiucheng Chen** and Bo Wang. "*Valuable Hallucinations: Realizable Non-realistic Propositions*." ArXiv abs/2502.11113 (2025): n. pag. *(Under Revision)*

[2] Lingbo Gao, Xiran Ma, **Qiucheng Chen**, Guohong Li, and Yiyang Zhang. *Foundation Models for Prognostics and Health Management in Industrial Cyber-Physical Systems: A survey and roadmap. (Awaiting Submission)*

SKILLS & INTERESTS

IT Skills: C/C++, Python, PyTorch, System Verilog, HTML, JavaScript, CSS, SPSS, SQL, LaTex

Research Interests: Large Language Models, Hallucinations in LLMs, Multi-Modal LLMs, LLM Reasoning

Language: English (IELTS 7.5), Chinese (Mandarin)

Interests: Swimming, Basketball, Badminton, Piano, Guitar, Zither, Painting