CHRISTY (GUANYI) ZHANG

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Technical Skills

Programming Languages: Python, SQL, JavaScript, Java, C#
Frameworks and Tools: PyTorch, scikit-learn, HuggingFace, OpenCV, AWS, Matlab

Education

University of British Columbia   **Sep 2023 – Aug 2025**
Master of Engineering in Computer Engineering   *Vancouver, BC*
- GPA: 4.33 / 4.33.

University of British Columbia   **Sep 2019 – May 2024**
Bachelor of Applied Science in Computer Engineering (Graduation with Distinction)   *Vancouver, BC*
- GPA: 4.0 / 4.33.

Experience

University of British Columbia   **Aug 2023– Sep 2025**
Research Assistant   *Vancouver, BC*
- Built data pipelines to collect and process multimodal data from 500K+ Bilibili posts for large-scale analysis.
- Engineered image, video, and text features (embeddings, color, scene duration, text stats) for model training.
- Applied ML models to identify behavioral patterns and correlations.
- Automated data processing and feature extraction workflows.

University of British Columbia   **Jan 2025–Apr 2025 & Jul 2025–Aug 2025**
Teaching Assistant – Business Programming and Analytics   *Vancouver, BC*
- Graded assignments and exams, providing detailed feedback on coding and analytical clarity.
- Held office hours and prepared instructional materials to reinforce programming and data analysis concepts.

Industrial and Commercial Bank of China   **Mar 2023 – Apr 2023**
Data Analyst Intern   *Beijing, China*
- Analyzed customer churn data across branches to identify trends and improve client retention.
- Examined customer behavior using third-party payment data to inform targeted business strategies.

Lenovo   **Oct 2022 – Feb 2023**
Assistant Engineer, Platform Development (Intern)   *Beijing, China*
- Designed a relational database for a warehouse management system based on client requirements.
- Developed prototype web and mobile interfaces using C#, .NET, and MySQL to demonstrate core system functionality.

Projects

Resource-Efficient Large Language Model for Log Anomaly Detection
- Developed a two-stage optimization pipeline combining Quantized Low-Rank Adaptation (QLoRA) and iterative structured pruning for memory-efficient fine-tuning and deployment.
- Reduced training memory by 85% and inference latency by 45% while maintaining F1 score; successfully deployed the optimized model on a Raspberry Pi edge device.

Test-Case-Aware Prompting for Code Translation
- Designed a structured prompting pipeline to improve LLM-based code translation between Python and JavaScript.
- Progressively enhanced performance by extending an instruction-based baseline with test cases, one-shot examples, and iterative refinement.
- Evaluated translation correctness using original HumanEval-X test cases, achieving accuracy improvements from 90.85% to 100% for Gemini (Python→JavaScript) and from 48.78% and 64.02% to over 90% for GPT-3.5 across both directions.

Investigating Gender Bias in COMET-ATOMIC$_{20}^{20}$
- Investigated gender bias in commonsense reasoning models by altering gendered subjects in event prompts.
- Analyzed COMET-ATOMIC$_{20}^{20}$ outputs using sentiment analysis, agreement scoring, and lexical bias detection.
- Observed female-associated outputs with more family and affective language, and male-associated outputs emphasizing social and power-related terms.

Transformer-Based Reinforcement Learning
- Integrated transformer blocks into the critic network of an Actor–Critic reinforcement learning model to capture long-term dependencies in sequential decision-making.
- Evaluated performance on OpenAI Gym's Pendulum environment, achieving smoother convergence and improved reward stability compared to the baseline Actor–Critic model.