Brian Kim

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EDUCATION

MSE, Software Engineering & Systems — May 2025

The University of Texas at Austin – Thesis: *Do Privacy Policies Align with Users' Privacy Values?*

BSEE, Software Engineering & Design — May 2023

The University of Texas at Austin – GPA: 3.73/4.0

PROFESSIONAL EXPERIENCE

Software Engineer, UT Computational Visualization Center – Austin, TX — May 2025 – Present

- Built a Python simulation platform around NVIDIA Sionna-RT to compute ray-traced urban radio-wave propagation.
- Automated Blender with OpenStreetMap & ArcGIS to generate realistic scenes integrated into Unreal Engine 5.
- Orchestrated pipelines for real-time assessment including dataset generation and neural net training (ResNet-18).
- Trained a neural SDE Infinite-GAN on TACC supercomputer (400+ W&B GPU-hrs) for urban movement generation.

Graduate Research Assistant, UT Center for Identity – Austin, TX — September 2023 – May 2025

- Published 3 peer-reviewed papers (1 first-author); submitted 1 additional first-author manuscript.
- Worked as a Teaching Assistant for 3 undergraduate and graduate courses in Information Security and Privacy.
- Assisted 2 senior capstone teams on the PrivacyCheck™ project with onboarding, planning, and development.

Cybersecurity Intern, United States Automobile Association – San Antonio, TX — May 2023 – August 2023

- Transitioned 8 legacy Detica rulesets to SAS, contributing to the decommissioning of Detica systems.
- Collaborated with onsite and offshore teams to reduce false positives by optimizing matching algorithms.

AI/ML PROJECTS

MAD-Community — October 2024 – December 2024

- Created novel Multi-Agent Debate framework utilizing LLM agents organized in interconnected communities.
- Designed directed graph network structure where communities debate and refine responses through multiple stages.
- Implemented system prompt engineering techniques to enhance debate quality and conciseness.
- Achieved 39% increase in accuracy over GPT-4 based model in original benchmark paper with optimized network design using significantly cheaper GPT-4o mini agents.

NEAT-PSO: Hybrid CNN Architecture Evolution — October 2024 – December 2024

- Developed hybrid neural network architecture evolution technique by combining NeuroEvolution of Augmenting Topologies and Particle Swarm Optimization.
- Optimized NEAT hyperparameters using multi-objective PSO, targeting error reduction and parameter efficiency.
- Doubled accuracy with fittest individual over worst individual over 50 generations on CIFAR-10 image classification.

Reinforcement Learning Trading Agent Exploration — March 2024 – April 2024

- Developed deep Reinforcement Learning model integrating CNNs with established frameworks for stock trading.
- Compared metrics such as Sharpe ratio, return, and volatility of RL algorithms A2C, PPO, DDPG, and their ensemble.
- Outperformed 4 major market indices using ensemble model and CNN over a 5-year period (Jan 2018 to Jan 2023).

SKILLS

Programming:	Python, Java, SAS, SQL, C++, LaTeX
Machine Learning:	Reinforcement Learning, PyTorch, TensorFlow, scikit-learn, NumPy, OpenAI API
Infrastructure:	Linux, Git, Slurm/HPC, Weights & Biases, CUDA
Simulation/Graphics:	Blender, Unreal Engine 5, PyGame, Sionna-RT