TYLER CHAN

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EDUCATION

Rensselaer Polytechnic Institute **January 2024 - December 2024**
Master's, Computer Science *GPA: 3.85*

- Conducting research under the guidance of Professor Lei Yu, focusing on security and privacy in machine learning and AI.

Rensselaer Polytechnic Institute **August 2020 - December 2023**
Bachelor's, Computer Engineering *GPA: 3.76*

- Magna Cum Laude
- Dean’s Honor List: All Semesters

PROFESSIONAL EXPERIENCE

Rensselaer Polytechnic Institute **Troy, NY, USA**
Research Assistant *June 2024 - August 2024*

- Contributing to the development of an innovative machine unlearning framework designed to enable precise and complete removal of learned information from machine learning models (currently under confidentiality).

Western Digital **Rochester, MN, USA**
Engineering Co-Op *January 2023 - August 2023*

- Developed customized Clang-tidy and Clang-format tools to enforce company-specific coding standards.
- Designed and implemented data collection tools and parsers for preprocessing data used in machine learning models.
- Utilized HiveSQL and AWS S3 to efficiently query and manage large-scale datasets.
- Applied both supervised and unsupervised learning algorithms to uncover complex trends within the collected data.

PROJECTS & OUTSIDE EXPERIENCE

Utilizing IK for Generative Motion - *Link to project*

2024 - 2024

- Adapted and extended an existing generative motion project based on the seminal work from the paper "Motion In-betweening via Two-stage Transformers" by Qin et al., introducing inverse kinematics (IK) controllers to improve the model's efficiency in character animation.
- Reduced the number of trainable parameters by optimizing the output size due to IK integration, which streamlined the motion generation process, reducing computational costs while maintaining high-quality animation results.
- Demonstrated the effectiveness of these improvements through example previews, showcasing the benefits of IK-enhanced generative motion on YouTube [Preview: youtu.be/ZrFl5hJJQ5o].
- Technologies: Python, PyTorch, Blender.

Text2Movie - *Link to project*

2023 - 2023

- Engineered an AI-driven pipeline that transforms simple text descriptions into fully generated multi-scene movies, including AI-generated visuals, voice acting, and video sequences, automating the entire creative process.
- Developed an end-to-end solution utilizing cutting-edge models such as SDXL/Stable Diffusion and SVD-XT for video generation, GPT-4 for story and script writing, and advanced speech synthesis models like VITS, TorToiSe-TTS, and So-VITS-SVC for creating dynamic, high-quality voiceovers.
- Technologies: Python, PyTorch, Diffusers.
- See the project page for examples: tylerchan.me/go/t2m.html

SKILLS

Skills: Python, Pytorch, Matplotlib, NumPy, Scikit-Learn, C/C++, x86_64, Java, Lua, LaTeX, CAD, Git, Machine Learning, AI, LLM, Deep Learning, Natural Language Processing (NLP)