

JAKE FRISCHMANN

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EDUCATION

University of Maryland, College Park

B.S. in Computer Science and B.S. in Physics (Dual Degree)

Minor in Quantum Science and Engineering; *Accelerated B.S./M.S. in Computer Science (2028-2029)*

Fantasy Book Club President, AppDev Henson Day Initiative, Bitcamp Quantum Organizer, Robotics Terafromers Software

Expected May 2028

GPA: 3.85, Dean's List 2025

EXPERIENCE & RESEARCH

Zheng Research Lab, Drexel University

Department of Mechanical Engineering and Mechanics

Research Assistant May 2025 – Jul 2025 Philadelphia, PA

- Designed **soft robotic** manipulators (SpiRob) in **SolidWorks** to grasp complex geometries via **tendon-driven continuum structures** and tentacle-style grippers, and built **GPU-accelerated simulations** of actuated cables and **soft-body dynamics** in **NVIDIA Isaac Gym**. Improved grasping non-standard objects compared to current industrial machines.

Pennsylvania Governor's School for the Sciences (PGSS) Researcher Summer 2024 Carnegie Mellon University

- Led a **BlokusDuo deep RL team**, building **PPO + MCTS self-play agents** with **CNN board encodings** that achieved **~85% win rate** over tuned heuristics across **18,000+ GPU games** and co-authored a **20-page peer-reviewed PGSS Journal paper** on the architecture and experiments.

Directed Anxious Generation Corrolational Study

Lead Researcher Aug 2024 – Dec 2025

- Led a **stratified, cluster-sampled** survey of high school students (**n ≈ 140**) linking multi-platform **screen time metrics** to validated measures of social connectedness and sleep, **cleaning** heterogeneous iOS/Android usage data and performing **linear regression/t-tests (a = 0.01)** that found statistically significant negative associations between weekly phone use, sociability, anxiety, and weekday sleep.

Drexel NLP Summer Academy

Participant Summer 2023 Philadelphia, PA

- Implemented **text classification** and **language models** in **Python** using standard ML libraries, applying core NLP concepts from an intensive summer curriculum to end-to-end mini projects.

Drexel Bioengineering Summer Program

Research Intern Summer 2022 Philadelphia, PA

- Prototyped **AR-enhanced physical-therapy goggles** in **Blender**, exploring **motion-tracking** and **feedback**.

PROJECTS

RoadTrip: AI-Enhanced Vacation Planning iOS App

SwiftUI, GPT-4, REST APIs

- Shipped a **SwiftUI iOS app** that orchestrates **GPT-4, Google Maps, and Booking.com APIs** to generate multi-day itineraries, with **CoreLocation/CoreData-backed offline storage** and **resilient networking** (retries, rate-limit handling, caching) for smooth performance on unreliable networks.

TOOL: Music Generation & Style Transfer Platform

Python, PyTorch, TensorFlow

- Engineered a **TOOL-style music generation platform** by scraping audio/lyrics metadata and training **U-Net-style generative models**, using **mixed-precision training** and **TensorBoard-tracked hyperparameter sweeps** to iterate on style-transfer architectures.

Medication Management and Adherence App

React Native, TypeScript, HCI

- Designing a cross-platform tracker to increase medication adherence by applying **friction-in-design, habit formation, and progressive disclosure** to **lower cognitive load** and surface **adherence patterns** while preserving user privacy.

TECHNICAL SKILLS

Languages

Python, C++, C#, Rust, Swift, JavaScript, TypeScript, SQL, R

Project Management

GitHub, GitLab, GitHub Actions, Jira, pytest, Prettier, CMake

Machine Learning

[Coursera Deep Learning Specialization](#), PyTorch, TensorFlow, Hugging Face Hub, Kaggle

Web and Cloud

MERN stack, React Native, REST APIs, OAuth, .NET MAUI

REFERENCES

Available upon request, including:

- Dr. Yue (Luna) Zheng**, Mechanical Engineering Professor, Drexel University y894@drexel.edu
- Mollie Kaufer**, Communications Professor, University of Maryland mkaufer@umd.edu