Kyle Chiem

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Education

The Pennsylvania State University – Schreyer Honors College — University Park, PA
Bachelor of Science in Computer Science and Math, College of Engineering — *Aug. 2024 - May 2027*
Cumulative GPA: 4.00/4.00
Activities: Nittany AI, Humanoid Robotics Club, PSU IEEE, HackPSU

Strath Haven High School — Wallingford, PA
High School Diploma — *Sep. 2020 - Jun. 2024*
Cumulative GPA: 4.00/4.00 — Honors: National Honors Society

Experience

The Pennsylvania State University — May 2025 - Present
Research Intern - Robotics & Deep Learning — *University Park, PA*

- Built **convolutional** and **reinforcement learning** models to predict humanoid robot stability with computer vision
- Executed **4000+ parallel simulations** on **Isaac Lab** to train a locomotion controller for various humanoid robots
- Collected simulated **IMU and ego-centric camera data** and trained critic functions for **stability score** prediction
- Integrated **domain randomization** to create a robust framework capable of **in-person deployment (Sim-To-Real)**

LPAC - Laboratory for Perception, Action, and Cognition — February 2025 - Present
Undergraduate Research Assistant — *University Park, PA*

- Procured **over 1.3 million frames of human motion capture (MoCap) data** using Vicon Motion Capture tools
- Contributed in developing a **transformer**, achieving **SOTA performance** in foot pressure prediction and setting a **new benchmark of 15.95 mm** mean error in center-of-mass estimation with movement video as input
- Optimized neural network through **hyperparameter tuning** with **Optuna**, improving prediction performance by **13%**

Nittany AI Alliance Student Chapter — January 2025 - May 2025
Machine Learning Apprentice — *University Park, PA*

- Designed a **RAG Chatbot** using Sentence Transformers and **Tiny LLaMa LLM** for finance-related Q&A over PDFs
- Preprocessed **100,000+ NIH Chest X-ray** data to train a **CNN** to detect pneumonia patients at an accuracy of **92%**
- Explored overfitting control, RL reward shaping, and model evaluation with precision and confusion matrix analysis

Projects

Tetris AI Agent | *PyTorch, TensorBoard, NumPy, Git* | *GitHub* — May 2025 - Present

- Designed a **deep Q-learning network** with reward-shaping and decaying epsilon strategies
- Leveraged **TensorBoard** in analyzing performance metrics to improve overall model structure and hyperparameters
- Implemented a **step decay learning-rate scheduler** and prioritized experience replay to stabilize training

MacroMate | *Git, FastAPI, SQAlchemy, Flutter* | *GitHub* — October 2024 - November 2024

- Won **2nd Best Overall** at HackPSU **out of 50+ teams**
- Developed a nutrition planning **Flutter app** using **OpenAI API** and student biometrics for PSU students
- Created scalable **FastAPI** backend to store **75+ pages** of daily scraped data from Penn state dining hall menus
- Designed a **full-stack** pipeline and coordinated with four others in **under 24 hours**

SHHS Activities | *Kotlin, Gradle, Firebase, Git* | *GitHub* — January 2024 - June 2024

- Engineered a **Full Stack** app facilitating club discovery, engagement, and announcements in Strath Haven High School
- Leveraged **Firebase API** to integrate a scalable backend capable of storing over **100+ clubs** and **1000+ users**
- Programmed **20+ SQL queries** that sustain a robust data retrieval backend and enable customizable querying for users

Technical Skills

Languages: Java, Python, JavaScript, Typescript, Kotlin, Flutter, C, C++, HTML, CSS
Technologies: Git, NumPy, PyTorch, Tensorflow, Optuna, React.js, Node.js, Gradle, Firebase, SQLAlchemy, Linux
Concepts: Full stack Development, Frontend, Backend, Unit Testing, API Integration, Scalability, Machine Learning, Computer Vision, Natural Language Processing, AI Concepts, Transformers, Reinforcement Learning, LLM, RAG