

NICHOLAS GREINER

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EDUCATION

University of Florida

Bachelor of Science in Computer Science, Minor in Mathematics | GPA: 3.85

Gainesville, FL

Expected May 2027

TECHNICAL SKILLS

Languages: Python, C++, TypeScript/JavaScript

ML/AI: PyTorch, Eigen, PPO, ResNet, OpenVLA, LIBERO, Retrieval-Augmented Generation

Tools: SLURM, Git, GitHub, TensorBoard, Visual Studio

EXPERIENCE

Undergraduate AI Research Assistant

Aug. 2025 – Present

University of Florida

Gainesville, FL

- Built an end-to-end PyTorch pipeline processing approximately 36,000 ImageNet-1K images through ResNet inference, attribution-map generation, downstream MLP/ResNet ID-vs-OOD classification, and metric evaluation.
- Executed 100+ GPU-hours across ResNet-18/50 and near, far, and combined OOD settings using SLURM, managing training, checkpointing, experiment tracking, and reproducible evaluation workflows.
- Extended experimentation to vision-language-action models including OpenVLA and $\pi 0.5$ on LIBERO, generating rollout datasets to study model behavior and failure signals across robotic manipulation tasks.

Teaching Assistant (C++)

Jan. 2026 – Present

University of Florida

Gainesville, FL

- Lead weekly C++ discussion sections for 30+ students in a 300+ student programming course, teaching memory management, object-oriented programming, debugging, and algorithmic problem solving.
- Debug student implementations across compile-time, runtime, memory, and program-design failures by tracing execution state and guiding students toward corrective design changes.
- Contributed free-response programming questions for course examinations, designing problems that assess C++ reasoning, debugging, and implementation skills.

PROJECTS

PvZRL | Python, C#, PPO, Behavior Cloning | [GitHub](#)

June 2026 – Present

- Built a 20,000+ line reinforcement-learning system with an 841-action masked action space and 4,364-feature observation space, integrating Gymnasium, MaskablePPO, game-state extraction, dynamic legality constraints, and checkpoint management.
- Trained policies for 500,000+ environment steps across sustained 20+ hour runs, instrumenting reward components, runtime state, TensorBoard metrics, and progression through early Adventure content.
- Extended PPO training with behavior cloning from Twitch-driven demonstrations and a localhost C# bridge that exposes structured Unity game state to Python.

Classical ML in C++ | C++, Eigen | [GitHub](#)

Aug. 2026 – Present

- Implemented linear regression from scratch in C++ with Eigen, supporting both closed-form optimization and batch gradient descent through reusable `fit` and `predict` interfaces.
- Implemented MSE, RMSE, MAE, and R-squared regression metrics and organized numerical types, models, and metrics into modular library components.

Gator Gabber | React, FastAPI, Python, RAG | [GitHub](#) | [Live Demo](#)

Oct. 2025 – Present

- Built an AI-powered Spanish conversation platform with a React frontend and FastAPI backend, integrating text conversation, speech-to-text, text-to-speech, translation, and vision-capable file inputs.
- Implemented course-aware retrieval for SPN1130 using ChromaDB, OpenAI embeddings, and LangChain to retrieve relevant course material and inject it into LLM context before response generation.