

Charles Pratt

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SUMMARY

Research-oriented software engineer and CS student with end-to-end experience building and deploying AI systems — from data collection and model training through real-world execution. Skilled in integrating LLMs, RL-adjacent policies, and autonomous pipelines in fast-paced research environments. Proven ability to own ambiguous projects independently and collaborate with researchers to turn ideas into working systems.

EDUCATION

B.S. Computer Science — Minor in Digital Arts and Sciences

GPA 3.85

University of Florida · Gainesville, FL · Aug 2023 – May 2027

Machine Learning (Grad) · NLP · Algorithm Abstraction & Design · Autonomous Robots · Competitive Programming · Operating Systems · Databases

TECHNICAL SKILLS

LANGUAGES & TOOLS

Python, C++, Java, PyTorch, Git, Linux, ROS2, OpenCV, SQL, React, CI/CD

AI & RESEARCH

LLMs, Reinforcement Learning, Diffusion Policies, Imitation Learning, RLHF, Model Training & Evaluation, Real-Time Inference

RESEARCH EXPERIENCE

AI Research Engineering Intern

May – Aug 2025

Institute for Human and Machine Cognition · Pensacola, FL

- Owned end-to-end development of an autonomous AI pipeline for the Unitree H1-2 humanoid — VR teleoperation data collection through diffusion policy training and live hardware deployment.
- Integrated LLM-based planning to translate natural language commands into structured execution goals, bridging high-level reasoning with low-level robot control.
- Bridged Python AI frameworks (Lerobot) with Java control systems via ROS2, enabling cross-language workflows and rapid policy iteration.

Research Engineering Intern

May – Aug 2024

Institute for Human and Machine Cognition · Pensacola, FL

- Built sub-100ms motion capture pipelines processing synchronized multi-sensor streams to drive real-time control of Psyonic Ability Hands, Franka Arms, and humanoid Nadia.
- Developed evaluation and visualization tools enabling researchers to rapidly interpret system behavior and iterate during live trials.

LEADERSHIP

Design Team Captain — Gator Theme Park Engineering & Design

Aug 2024 – Present

Gainesville, FL

- Independently scoped and led development of an animatronic control system — architecting, coordinating cross-functional subteams, and delivering end-to-end.
- Drove agile workflows across mechanical, electrical, and software teams; shipped iteratively under tight timelines with real deployment constraints.

PROJECTS

Learning-Based Robotic Manipulation

Autonomous Robotics Course

Modular autonomous agent pipeline: LLM planning node → visuomotor policy → ROS2 infrastructure. Full cycle: data collection, imitation learning, evaluation, hardware deployment.

Movie Graph Visualizer

Data Structures & Algorithms

BFS and Dijkstra pathfinding over a 45,000-node movie-actor graph with an interactive HTML/JS visualization for shortest-path exploration.

Animatronic Gator Head

Gator TPED

Cross-platform control pipeline (Unity → Python → embedded) with FFT-based audio-reactive behaviors and CSV-driven sim-to-real animation deployment.

Jar of Joy

Software Engineering Course

Full-stack web app with Python/MySQL backend and React/JS frontend, featuring user authentication and a dynamic database-driven experience.