Christian Kauten

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https://kautenja.github.io

Research and Work Experience

Graduate Teaching Assistant
Auburn University

Auburn, AL
2021 (Spring)

- Assisted the administration of a graduate level course on operating systems by grading homework, projects, and exams.
- Worked one-on-one with students to resolve conflicts with coding assignments.

Graduate Research Assistant
Auburn University

Auburn, AL
2017 – 2020

- Lead a team of undergraduate engineers to development an autonomous vehicle simulation platform using Unity and C#.
- Developed a user interface for autonomous vehicles to augment the intelligence of the passenger using camera sensors and object detection models. Conducted a behaviorial study to determine that the proposed system improved human trust in artificial intelligence, and consequently the intention to adopt an autonomous vehicle. Findings are being preparred for submission to a refereed journal.
- Conducted DHS–funded research in financial sector by developing equity market simulations using agent-based modeling techniques. Findings were circulated internally for the US Department of Treasury.
- Conducted research on blood donor retention for a regional blood center using machine learning techniques. Findings are under the first round of review for publication in the Information Systems Frontiers journal.
- Developed a Nintendo Entertainment System (NES) emulator in C++ and Python as an OpenAI Gym interface. Built a deep reinforcement learning agent that was capable of beating the game Super Mario Bros.

Education

B.S., M.S., Ph.D., Computer Science & Software Engineering
Auburn University

Auburn, AL
2013 – 2021

Side Projects

Financial Market
A networked financial market based on CBOE data feeds

C++
2020

Limit Order Book
An extensively tested and benchmarked limit order book data structure

C++
2020

RackNES ("Eurorack module" prototype)
A Nintendo Entertainment System emulator as a Eurorack module for VCV Rack

C++
2020

Skills

- **Software Engineering** Software Modeling and Design; Test and Behavior Driven Development; Benchmarking, Profiling, and Optizimation

- **Numerical Analysis and Computer Science** Algorithm Design and Analysis; Artificial Intelligence and Machine Learning; Digital Signal Processing

- **Programming Environments** C++ (5+ years), Python (5+ years), MATLAB (1+ year), JavaScript (2+ years)

- **Scientific Toolkit** Keras, TensorFlow, numpy, scipy, pandas, SciKit Learn / Image (all 4+ years)