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Tampa, FL

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https://Linktr.ee/Johnnykoch02/

Jonathan Koch

PROFESSIONAL INTERESTS

Languages: Python, C & C++, C#, Java, Lua, JavaScript, Perl
Worked With: GitHub API, Stable-Baselines3, OpenAI, PyTorch, Django, React, REST, Linux, Cisco Networking, 2D & 3D Physics and Simulation Engines
Research Background: Robotics & AI; Object Manipulation and Grasping, Deep Q Networks, Proximal Policy, DNN Architectures, Graph NNs & LSTMs

EDUCATION

Bachelor of Science in Computer Science, Concentration in Robotics and Automation
University of South Florida College of Engineering, Tampa, FL

Cumulative GPA:
3.6/4.0
Fall 2020 - Spring 2024

EXPERIENCE

Software Engineering Co/Op
CAE USA

May 2022 - Present
Tampa FL

- Development of lab environments of computer system networks for simulation and hardware testing.
- Expanding GitHub and Artifactory API functionality within C# projects using RestSharp, Angular JS application development for system management automation tool, and user permissions manager.
- Collaborated on repositories for improving SonarQube quality gate rating on dozens of source code ratings from E to A.

Undergraduate Researcher
Robot Perception and Action Laboratory, *University of South Florida,* https://rpal.cse.usf.edu/

Fall 2021 – Present
Tampa FL

- Research in robotic object manipulation through reinforcement learning; Collect and analyze data in the real world and simulation for training of RL models and investigate new solutions to improving model accuracy and performance.
- Document and communicate results amongst lab members, and incorporate recorded findings into academic publishing.

Senior Coding Coach
theCoderSchool

Fall 2021 – Winter 2022
Tampa FL

- Instilling an interest in and mentoring the next generation of software developers;
- Formulate hobby projects based on student's interests, aid in design development, and educate on the utilization of necessary computer logic principles. Embrace the software design process to bridge ideas to reality.
- Finalize a working design through knowledge and application of learned computer science concepts and ideas.

Mentorship Chair, VEX Robotics Programming Lead
USF IEEE Student Chapter

Fall 2020 - Present
Tampa FL

- Lead Mentorship Club; organize and lead meetings, aid students in problem-solving, and work within a budget constraint.
- Lead Programming for VEX; Design and Lead project implementation; assign programming work to programming members to learn and aid in the development of software for sensor systems, data collection, and system testing.

PROJECTS

Virtual Assistant
https://github.com/Johnnykoch02/VirtualAssistant

August 2021 - Present
(Video from the Data Pipeline) https://www.screencast.com/t/6TbGzbHzr

- Develop a python Agent to target novice actions performed on a Computer User and allow verbal automation of watching Netflix shows and movies, watching YouTube videos, and playing songs on Spotify.
- Research into Keyword Model Architectures and development via Convolutional Neural Networks and LSTMs.
- Development of a system that memorizes information about different users and converses based on previous experiences, implemented using OpenAI's text-davinci3 model open-source API.

AI Chess
https://github.com/Johnnykoch02/*ChessEngine*

August 2022 - Present
(Video Detailing Project) https://www.screencast.com/t/f4BB4gmnze

- theCoderSchool Project with an advanced Python Student, who had the desire to learn about Game Development
- Implementation of decision trees, state machines, project structuring, and Artificial Intelligence Algorithms
- Since my departure from theCoderSchool, this project has been morphed into a self-research project into training an agent via RL algorithms such as PPO or DQN to create a superhuman performance chess AI (*see GitHub Repository*).