KOLTON SPEER

4501 Kentsfield Ln, Apt 305, Columbia, Missouri 65201
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EDUCATION

University of Missouri — **PhD in Computer Vision and Graphics**
May 2024

University of Missouri — **Bachelor of Science in Computer Science**
Minors: Physics, Mathematics — May 2019

RESEARCH AND WORK EXPERIENCE

Research Assistant for Dr. Ye Duan — **May 2019 – Present**

- Investigating methods for Visual Odometry and Visual SLAM.
- Investigating methods for Deep Fake generation and detection.

Research Programmer for Dr. Bruce Bartholow — **May 2018 – Present**

- Programmed participant tasks for a study on alcohol sensitivity.
- Built program to automatically score participant video data using the Facial Action Coding System.

Undergraduate Research Assistant for Dr. Yi Shang — **December 2017 – May 2019**

- Determined predictive factors for successful sales calls using Natural Language Processing techniques.
- Presented a poster at the University of Missouri Undergraduate Research Forum.

Systems Assurance Intern at Union Pacific — **May 2015 – August 2015**

- Worked to develop and ensure the continuing function of Positive Train Control.
- Developed applications to track system health and diagnose errors in Wayside radios.

PROJECTS ALL CODE AVAILABLE ON GITHUB

Slither Bot

- Developing an AI system to play Slither.io, a multiplayer online game.
- Training convolutional neural networks to make end-to-end control decisions in a chaotic environment.

AutoFACS

- Developed a system to automatically annotate psychological study participant data using the Facial Action Coding System.
- Currently developing more robust facial landmark detectors for use in this system.

Deeptector.io

- Deeptector.io is a web app for detecting Deep Fake videos. This project is a submission to the 2020 RJI Student Innovation Competition.

SKILLS

- **Languages**: C, C++, Python, Java, Kotlin, Matlab, x86 Assembly
- **Databases**: PostgreSQL, MongoDB, SQLite
- **Libraries/Software**: OpenCV, Tensorflow, Pytorch, Flask, CUDA, ROS, OpenGL
- **Parallel Programming**: Multithreading, Multiprocessing, GPU programming
- **Computer Vision**: Visual Odometry, Image Segmentation and Classification, 3D Reconstruction

EXTRACURRICULAR ACTIVITIES

Mizzou Eco Racing Team – Head Electrical Engineer for Hydrogen Car Division

- Designed and implemented electrical systems for a Hydrogen Fueled Urban Concept vehicle.
- Currently designing an autonomous system for a vehicle in the FSAE Electric competition.
- Annual competitor in the Shell Eco Marathon in Sonoma, California.