

Wenhao He

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SKILLS

Languages: Python, JavaScript, Scala, C/C++, HTML, CSS, L^AT_EX

Libraries: OpenCV, Sci-kit Learn, Pandas, Numpy, Matplotlib, Scipy

Frameworks: ROS, Hadoop, PyTorch, Tensor-Flow, React, Flask, Pygame, NodeJS

Developer Tools: Jupyter, PyCharm, IntelliJ IDEA, Visual Studio Code, Magicavoxel, GitHub, ZenHub, Git, Docker

Cloud/Databases: AWS, MongoDB, MySQL

OS: Linux, Windows, MacOS

EDUCATION

•University at Buffalo, The State University of New York

Expected Dec 2023

Master of Science in Artificial Intelligence

Coursework: Machine Learning, Deep Learning, Computer Vision, Reinforcement Learning, Robotic Algorithm

Award: Graduate Opportunity Program Tuition Scholarships (Sep 2022, Jan 2023, Aug 2023)

•University at Buffalo, The State University of New York

Aug 2018 - May 2022

Bachelor of Science in Computer Science

Coursework: Data Structures, Computer Architecture, Computer Networking, Web Application

RESEARCH

•Audio Cloning: PyTorch, Python

Aug 2023 - Present

Engaging in a Deepfake project for cloning judge's voice in civil rights case Brown v. Board of Education

- supervised by Dr. David S. Doermann
- Collaborated with a team of 4 and designed voice cloning model using Deepfake techniques
- Generated recorded voice judges reading court decisions in own voices
- Bringing court documents to life and preserving authentic historical sounds through modern techniques

PROJECTS

•Monocular Depth Estimation in Single Image: PyTorch, OpenCV, Matplotlib, Python

Feb 2023 - May 2023

Conducted a Deep Learning project to ascertain distance between photographer and object in a 3D world.

- Cooperated with a team of 4 and engineered Computer Vision algorithms for feature extraction
- Collected large image-depth map pair datasets for deep-learning model
- Trained a deep learning model for monocular depth estimation
- Measured distance between photographer and object in 3D using an existing 2D image

•Multiple-agent Playing GoMoku Board Game: PyTorch, Matplotlib, Python

Mar 2023 - May 2023

A Reinforcement Learning project trains agents to play GoMoku board game

- Developed Monte Carlo Tree Search algorithm as own model
- Comparison on win rate between own crafted model and present AlphaZero model
- Independently developed and educated artificial agents using a bespoke model and the existing AlphaZero framework to compete against each other

•Detection on Fruit/Vegetables in 2D Images: PyTorch, OpenCV, Matplotlib, Python

Mar 2023 - May 2023

Conducted a Computer Vision project for detecting fruit and vegetables in 2D images

- Identified different categories of fruit and vegetables
- Count total number of fruit/vegetables on each category in different scale sizes image
- Applied Computer Vision knowledge such as edge detection to identify edges and curves in image

•Class Chat Application: MySQL, Docker, Python, JavaScript, HTML/CSS

Sep 2021 - Dec 2021

A Web App project for class-wide social network chat app

- Developed private messages system for users to communicate with class
- Fashioned UI for users to create a profile customization

EXPERIENCE

•University at Buffalo, The State University of New York

Feb 2020 - Mar 2021

Food Services at Student Union

Onsite

- Partnered with a team of 10 employees
- Presented an average of 50 customers and satisfied customer needs per day