John Engle

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Education

The Ohio State University — **Columbus, Ohio**
Bachelor of Science in Computer Engineering — August 2020 - December 2024

Experience

Research Assistant — **May 2022 - Present**
The Ohio State University - CFAES — Columbus, Ohio

- Utilized Bokeh Visualization and OpenLayers to visualize large-scale geo-spatial datasets over Google Maps imagery, improving data accessibility and analysis for projects involving 400,000 data points
- Wrote Python scripts to automate the statistical analysis of around 1,000 time series datasets
- Reviewed over 100 scientific papers on cutting-edge practices in deep learning and computer vision
- Automated a workflow for pre-processing UAV images using Pix4D's cloud API, reducing processing time by 55%
- Devised a novel computer vision pipeline to analyze user-supplied images with accuracy of 90%

IT Assistant — **October 2021 - April 2022**
The Ohio State University - College of Public Affairs — Columbus, Ohio

- Coordinated with John Glenn College and university-wide IT departments
- Used service desk applications SpiceWorks and ServiceNow to monitor incident and request statuses by everyone at the College of Public Affairs

Publications

Waltz, L., Katari, S., Hong, C., Anup, A., Colbert, J., Potlapally, A., Dill, T., Porter, C., **Engle, J.**, Stewart, C., Subramoni, H., Shearer, S., Machiraju, R., Ortez, O., Lindsey, L., Nandi, A., & Khanal, S. (2024). Cyberinfrastructure for machine learning applications in agriculture: Experiences, analysis, and vision. *Frontiers in Artificial Intelligence*, 7, 1496066.

Projects

FieldVision

- Trained a YOLO deep learning model on over 2000 annotated images to identify crops in drone imagery
- Tuned hyperparameters of deep learning model, resulting in a mAP50 accuracy score of around 90%
- Deployed a web dashboard with PostgreSQL and AI integration, user log-in, and image upload interface
- Integrated the model into a web application built using Python and Flask

Structured Light Camera

- Built a stereo vision system on Jetson Nano, creating accurate point clouds to aid in 3D reconstruction
- Collaborated in an Agile team to implement advanced triangulation algorithms with Python and OpenCV
- Developed a web interface with 3D point cloud display using Flask and Three.js
- Organized a 9-month plan for dividing up and completing project tasks using Jira

Skills

Languages: Python, Java, SQL, JavaScript, C++, MATLAB
Technologies/Tools: Git, Subversion, Flask, Jira, Linux, Docker