Trevor Geiger

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SKILLS

Languages: Python, JavaScript, C++, Java, LaTeX, SQL, HTML, CSS
Frameworks: PyTorch, TensorFlow, Flask, Node.js, React, MongoDB
Tools: CUDA, Docker, Git, AWS, GCP, Kubernetes, JIRA

EDUCATION

University of Central Florida   Aug 2018 – Dec 2023
B.S. Computer Science, College of Engineering & Computer Science   *Orlando, FL*
- **Selected Coursework:** Artificial Intelligence, Algorithms for Machine Learning, Matrix and Linear Algebra, Algorithms, Data Structures, Computer Vision, Object-Oriented Programming, Discrete Structures

PROJECTS

⬡ SenseRator: AI for Disaster Management — *Semifinalist, UCF Fall 2023 Senior Design Showcase*
- Achieved 91% segmentation accuracy on CamVid datasets with a model trained on NVIDIA Tesla H100 GPUs.
- Implemented object detection using YOLO v8 to an average accuracy of 77% across 5 classes.
- Implemented point cloud data rendering techniques to visualize infrastructure damage using Open3D.
- Elevated SenseRator's code quality and maintainability, enabling seamless integration of new features.
- Engineered rigorous testing protocols for SenseRator, dramatically enhancing code reliability and project agility.
- Enhanced segmentation model generalization across disparate datasets through image preprocessing techniques.
- Used confusion matrix analysis to fine-tune parameters to identify key areas for improvement in classification.

Bookmark Buddy
- Built efficient search by thresholding cosine similarities of embeddings pre-computed from exported bookmarks.
- Extracted and parsed HTML meta tags (description, keywords, etc.) for quick webpage summaries.
- Deployed NLP techniques for semantic analysis and topic extraction from webpage content.
- Stored meta tags in a structured JSON format for further processing.

Optical Flow for Motion Detection
- Deployed a real-time motion detection system using the Lucas-Kanade method in OpenCV.
- Integrated webcam data for accurate hand movement tracking and visualization.
- Developed a user interface for immediate visual feedback on motion detection.

MIPS Mini Processor Simulator
- Developed a MIPS processor simulator in C to emulate core functions.
- Implemented a single-cycle data-path for accurate processor behavior simulation.
- Added detailed logging for each instruction cycle to aid in debugging.

WORK EXPERIENCE

UrbanITY Lab   Feb 2023 – Jan 2024
Undergraduate Researcher, UCF   *Orlando, FL*
- Enhanced application portability and streamlined deployment by designing a robust developer pipeline.
- Deployed a custom DeepLabV3 model to enhance segmentation accuracy via layer-freezing, and transfer learning.
- Collaborated closely with research sponsors to meet project goals, requirements, and milestones.

Alorica   Jun 2020 – Oct 2021
Technical Support Specialist, Houghton Mifflin Harcourt Team   *Lake Mary, FL*
- Addressed technical issues for HMH's platforms across 10,000 schools, impacting 50 million students worldwide.
- Guided customers in FTP data integration for extensive school databases, ensuring secure and accurate transfers.
- Managed bug reporting and ticket resolution through JIRA, aiding in timely product improvements.