David Robinson

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Education

University of Central Florida

Bachelor of Science in Computer Science, Intelligent Robotic Systems Minor — *Expected May 2026 – 3.93 GPA*

Master of Science in Computer Vision — *Expected Start August 2026*

Relevant Coursework: Computer Vision, Data Structures and Algorithms, Linear Algebra, Artificial Intelligence

Technical Skills

Languages: Python, C/C++, SQL, Java, JavaScript, R, LaTeX
Machine Learning: PyTorch, TensorFlow, Scikit-Learn, Transformers, Sentence-Transformers, ONNXRuntime, OpenCV, YOLO, MMDetection, TorchScript, LangChain
Tools and Platforms: AWS, Docker, Kubernetes, Flask, Git, MongoDB, MySQL, PostgreSQL, Pandas, NumPy, Matplotlib
Certifications: AWS Cloud Practitioner, AWS Solutions Architect

Experience

Undergraduate Researcher — Orlando, FL

UCF Center for Research in Computer Vision — *August 2024 – Present*

- Applying state-of-the-art 3D pose estimation models to extract joint angles for quantitative stroke mobility analysis.
- Built and annotated a dataset of **1,000+** Box and Block Test clips (RGB + 2D pose) labeled with four action classes for stroke mobility research.
- Benchmarked neural networks (R3D, R2Plus1D, Video Swin Transformer, Video MViT, MotionBERT, PoseConv3D, MS-G3D) for movement analysis, achieving up to **90.18%** accuracy on the StrokeVision-Bench dataset.

Machine Learning Engineer — Remote

Contract — *March 2025 – May 2025*

- Designed and trained a neural network using Embedding-LSTM modules and an MLP, achieving **90.7%** accuracy and **93.59%** precision on a custom dataset of **4,000** labeled string pairs.
- Engineered features (tokenization, phoneme/metaphone generation, embedding similarity, Levenshtein distance) to enhance classification accuracy.
- Deployed an **ONNX**-optimized model into a Flask API for real-time inference, accelerating predictions by **4**×.

Publications

StrokeVision-Bench: A Multimodal Video and 2D Pose Benchmark for Tracking Stroke Recovery

***David Robinson**, Animesh Gupta, Rizwan Qureshi, Qiushi Fu, Mubarak Shah*

Accepted to IEEE MLSP 2025

Projects

Accelify | *PyTorch, MongoDB, Pandas, NumPy, Scikit-Learn, Flask, Python*

- Developed a PyTorch neural network that recommended ServiceNow Technical Accelerators, reducing loss by **95.8%** on a dataset of **2,000** company-product pairs.
- Built a recommendation dataset using TF-IDF and co-occurrence scores on product usage data with **150+** entries.

BookMate | *PyTorch, Selenium, NextJS 13, Flask, Python, R*

- Trained the **YOLOv8** model for identifying ISBNs, achieving **98.3 mAP** on a combined barcode dataset sourced from multiple public datasets.
- Created a PyTorch regression model to determine optimal selling prices for books, reaching **3.9 MSE Loss** on a self-collected dataset of **200** Amazon listings.

Campus Involvement

UCF Programming Team — Orlando, FL

Member — *Sep 2023 – Sep 2024*

- Achieved **4th place** in the 2023 **ICPC North America South Regional** Contest out of **100+ teams**.
- Created and judged problem sets for the UCF High School Programming Contest for **80+ teams**.