David Robinson

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Education

University of Central Florida Expected May 2026
Bachelor of Science in Computer Science, Intelligent Robotic Systems Minor *3.94 GPA*
Relevant Coursework: Computer Vision, Data Structures and Algorithms, Linear Algebra, Artificial Intelligence

Technical Skills

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

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.
- 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.
- Deployed an ONNX-optimized model through a Flask API, improving inference speed by 4x and supporting efficient batch predictions.

Software Engineering Intern Orlando, FL
Dynamic Animation Systems *August 2023 - July 2024*
- Fine-tuned the Mistral-7B LLM with Hugging Face's Transformers and PEFT libraries to generate simulation scenario files compliant with an XSD schema.
- Designed an ontology for simulation hosting, enabling deployment in on-premises and cloud environments using Docker and Kubernetes, with support for AWS and GCP.

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*
- Built a PyTorch recommender system for ServiceNow accelerators on a dataset of **2,000** company-product pairs, reducing loss by **95.8%** and deployed with Flask for inference.
- 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.

Awards and Competitions

1st Place — Waymo Mobility Challenge, ShellHacks 2025
1st Place — Assurant Way Challenge, ShellHacks 2025
4th Place — 2023 ICPC North America South Regional Contest