




David Robinson

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EDUCATION

University of Central Florida

Bachelor of Science in Computer Science, Intelligent Robotic Systems Minor

May 2026

3.94 GPA

EXPERIENCE

Undergraduate Researcher

UCF Center for Research in Computer Vision

August 2024 – Present

Orlando, FL

- Optimizing 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

Contract

March 2025 – May 2025

Remote

- 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

Dynamic Animation Systems

August 2023 – July 2024

Orlando, FL

- 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

- Developed 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.

SimplyASL | PyTorch, Swift, Flask, OpenCV, OpenAI, LangChain, NumPy

- Built a dataset mapping **70 distinct ASL signs** to 2D pose representations using **Meta AI's Sapiens** pose estimation model.
- Constructed an LSTM-based model to interpolate pose keypoints and generate temporally-smooth ASL transitions.

COMPETITIONS AND AWARDS

1st Place of 26 Teams — Waymo Mobility Challenge, ShellHacks 2025 (BirdsEye)

1st Place of 104 Teams — Assurant Way Challenge, ShellHacks 2025 (BirdsEye)

4th Place of 113 Teams — Division 2, ICPC NA Big South Regional 2023 (UCF-JV Saragossa)

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