David Robinson

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Education

University of Central Florida December 2026
Bachelor of Science in Computer Science, Intelligent Robotic Systems Minor *3.93 GPA*
Certifications: AWS Cloud Practitioner, AWS Solutions Architect
Awards: UCF Principal's Honor List, UCF Dean's Honor List x4, Florida Academic Scholar (Bright Futures)
Relevant Coursework: Computer Vision, Data Structures and Algorithms, Linear Algebra, Statistical Methods

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

Experience

Undergraduate Researcher Orlando, FL
UCF Center for Research in Computer Vision *August 2024 – Present*
- Built and analyzed a dataset of **1,000+** video clips for movement classification using pose estimation and action recognition.
- Fine-tuned and benchmarked neural networks (R3D, R2Plus1D, Video Swin Transformer, Video MViT, MotionBERT, PoseConv3D, MS-G3D) for movement analysis, achieving up to **90.18%** accuracy across different seeds.

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 string similarity classification task.
- Built a dataset of **4,000+** labeled string pairs and engineered feature extraction methods including tokenization, phoneme and metaphone generation, sentence embedding cosine similarity, and Levenshtein distance.
- Deployed an **ONNX**-optimized model into a Flask API for real-time inference, accelerating predictions by **4**× through batch preprocessing, fuzzy match pruning, JIT compilation, and C++-backed operations.

Projects

SimplyASL | *PyTorch, Swift, Flask, OpenCV, OpenAI, LangChain, NumPy*
- Generated 2D pose representations of ASL using **Meta AI's Sapiens** pose estimation model.
- Constructed an LSTM-based model to interpolate pose keypoints and generate temporally-smooth ASL transitions.

Accelify | *PyTorch, MongoDB, Pandas, NumPy, Scikit-Learn, Flask, Python*
- Developed a PyTorch neural network combining **embedding layers**, **LSTM-based sequence modeling**, and **fully connected layers** to recommend ServiceNow Technical Accelerators, achieving a **95.83%** reduction in loss.
- 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 on filtered barcode datasets, achieving **98.3 mAP** for identifying ISBNs.
- Created a PyTorch regression model to determine optimal selling prices for books, reaching **3.9 MSE Loss**.

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

Campus Involvement

UCF Programming Team Orlando, FL
Member *Sep 2023 – Sep 2024*
- Collaborated with teammates to solve advanced algorithmic problems under timed competition constraints.
- 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**.