

# 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, Artificial Intelligence, Linear Algebra

## 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

### Machine Learning Engineer

Remote

Contract (Confidential)

March 2025 – Present

- 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.

### Undergraduate Researcher

Orlando, FL

UCF Center for Research in Computer Vision

August 2024 – Present

- Created a custom dataset of **1,036** video samples of stroke patients performing Box and Block Tests, segmenting videos into 30-frame clips for temporal action classification.
- 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.

## PROJECTS

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

- Deployed **Meta AI's Sapiens Pose Estimation** model to generate 2D pose representations of ASL.
- Constructed an LSTM-based model to interpolate 2D keypoints for smoother ASL sign 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

- Leveraged **R** to track loss and accuracy curves for hyperparameter tuning and performance optimization.
- 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

Submitted to IEEE MLSP 2025

## 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**.