

# 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

PhD in Computer Science

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**.