



# David Robinson

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## EDUCATION

### University of Central Florida

May 2026

*Bachelor of Science in Computer Science, Intelligent Robotic Systems Minor*

*3.91 GPA*

**Certifications:** AWS Cloud Practitioner

**Awards:** UCF Dean's Honor List x2, Florida Academic Scholar

**Relevant Coursework:** Computer Vision, Data Structures and Algorithms, Software Engineering, Linear Algebra

## EXPERIENCE

### UCF Center for Research in Computer Vision

Orlando, FL

*Research Assistant*

*Aug 2024 – Present*

- Tailored **Meta AI's Sapiens Pose and Depth Estimation** models to estimate **3D pose keypoints** in hand-object interactions, facilitating precise identification of contact points.
- Trained U-Net architecture for semantic segmentation on Pascal VOC, achieving **63.2 mIoU** accuracy.

### Dynamic Animation Systems

Orlando, FL

*Software Engineering Intern*

*Aug 2023 – July 2024*

- Fine-tuned the **Mistral-7B** Large Language Model (LLM) to understand and generate dynamic simulation scenario files.
- Enhanced a Domain-Specific Language (DSL) in **JetBrains MPS** to streamline behavior models between a web server and a behavior engine.
- Developed a **Truffle-based interpreter** running on GraalVM, achieving a **500% performance** boost by integrating **JMH benchmarking**.

## PROJECTS

### SimplyASL | *PyTorch, Swift, Flask, OpenCV, OpenAI, Langchain, NumPy*

- Developed a **real-time visualization system** using **OpenCV** to display ASL by mapping 2D keypoints.
- Performed inference with Meta AI's Sapiens Pose Estimation model to generate **2D pose** representations of ASL signs.
- Leveraged **OpenAI's GPT-4** to translate English words into ASL Gloss tokens with **prompt engineering**.

### Accelify | *PyTorch, MongoDB, Pandas, NumPy, Scikit-Learn, Flask, Python*

- Designed and trained a **PyTorch LSTM-based architecture** to predict product recommendations based on industry and product-related embeddings, resulting in a **95.83% reduction in loss**.
- Generated a recommendation dataset using TF-IDF, co-occurrence matrices, and scoring mechanisms with **150+ entries**.
- Automated real-time data retrieval and model updates via MongoDB with each API call.

### BookMate | *PyTorch, Selenium, NextJS 13, Flask, Python, R*

- Utilized **R** to visualize and **analyze training loss curves**, enhancing model evaluation and **performance tuning**.
- Trained the **YOLOv8** model on filtered barcode datasets, achieving **98.3 mAP** for identifying ISBNs.
- Developed a **PyTorch regression model** to determine optimal selling prices for books, reaching **3.9 MSE Loss**.

## TECHNICAL SKILLS

**Languages:** Python, C/C++, R, SQL, Java, LaTeX

**Tools & Databases:** AWS, Git, Prisma, Hugging Face, Langchain, MongoDB, MySQL, PostgreSQL

**Libraries & Frameworks:** PyTorch, TensorFlow, Pandas, NumPy, Matplotlib, Flask, Scikit-Learn, Keras

## CAMPUS INVOLVEMENT

### UCF Programming Team

Orlando, FL

*Member*

*Sep 2023 – Sep 2024*

- Achieved **4th place** in the 2023 **ICPC Big South Regional** Division 2 Contest out of **100+ Universities**.
- Created and **judged problem sets** for the UCF High School Programming Contest for **80+ teams**.