David Robinson

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Education

University of Central Florida December 2026
Bachelor of Science in Computer Science, Data Science 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

Undergraduate Researcher Orlando, FL
UCF Center for Research in Computer Vision *Aug 2024 – Present*

- Conducted research toward publication in **ICCV 2025**, focusing on resolving hand-object mesh intersections with the **HOISDF** model trained on the **DexYCB** dataset for hand-object interaction.
- Trained **U-Net** architecture for semantic segmentation on Pascal VOC dataset, achieving **63.2 mIoU** accuracy.

Software Engineering Intern Orlando, FL
Dynamic Animation Systems *Aug 2023 – July 2024*

- Fine-tuned the **Mistral-7B** Large Language Model (LLM) to understand and generate dynamic simulation scenario files.
- Modeled an ontology for simulation hosting in on-premises and cloud environments, integrating containerization technologies like **Docker** and **Kubernetes**, as well as **AWS** and **GCP** to enhance deployment flexibility.
- Developed a **Truffle-based interpreter** running on GraalVM, achieving a **500% performance** boost by integrating **JMH benchmarking**.

Projects

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

- Designed and trained a **PyTorch Long Short-Term Memory (LSTM)-based architecture** to recommend ServiceNow Technical Accelerators from industry and product-related embeddings, achieving a **95.83% reduction in loss**.
- Generated a recommendation dataset using TF-IDF, co-occurrence matrices, and scoring mechanisms with **150+ entries** of sample company and ServiceNow product information.
- Automated real-time product updates and model training using **MongoDB** with each API call.

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 **few-shot prompting**.

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, JavaScript
Tools & Platforms: AWS, Git, MongoDB, MySQL, PostgreSQL, MS Office Suite, ONNX, Docker, Kubernetes
Libraries & Frameworks: PyTorch, TensorFlow, Pandas, NumPy, Matplotlib, Hugging Face, Langchain, Flask, Scikit-Learn, Keras, Express.js, JUnit, Jest, Prisma

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**.