

Daniel J Efres

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EDUCATION

University of Central Florida

Bachelor of Science in Computer Science, Minor in Mathematics

Orlando, FL

Expected Grad: May 2027

EXPERIENCE

Secretary

Knight Hacks

Jan 2025 – Present

Orlando, FL

- Led a **60-person executive team** as Secretary of **Knight Hacks**, UCF's largest student-run tech organization, serving a community of **1,200+ students**.
- Directed planning and execution of **Knight Hacks VIII**, a university-wide hackathon with **1,000+ participants** and **180+ projects**.
- Secured **\$30K+** in sponsorships from **Fortune 500 companies** to support Knight Hacks VIII.

Software Engineering Intern

UCF Center for Distributed Learning

Feb 2025 – Present

Orlando, FL

- Optimized **React/Django** web applications serving **60,000+** users by improving client-side **JavaScript** logic and refactoring inefficient **Python**-backed database queries, and containerizing services with **Docker**.
- Developed the **Intelligent Course Search LTI** using **PostgreSQL** vector embeddings and integrated local LLM inference via **Ollama** and **AWS Bedrock** to enable semantic search across course content.
- Architected a high-performance messaging backend by eliminating an **N+1** query bottleneck and adding **Redis** caching, resulting in **75%** lower server load, **90%** fewer database queries, and significantly faster real-time chat rendering for **60,000+** users.

Software Engineering Intern

Bank of New York

May 2025 – Aug 2025

Lake Mary, FL

- Spearheaded a greenfield enterprise API initiative as a solo developer, architecting and implementing **RESTful HTTP APIs** in **Java Spring Boot** used by **500+** employees, reducing manual data processing time by **89.5%**.
- Designed and deployed scalable CI/CD pipelines across **DEV**, **QA**, and **PROD** environments using **Docker**, **Google App Engine**, and **F5** load balancing, accelerating release cycles by **3x** and reducing deployment failures by **100%**.
- Integrated with legacy **Oracle** databases through schema discovery and reverse engineering, delivering multiple production-ready **HTTP API endpoints** to firm-wide production with **zero post-release defects** and improving data retrieval speeds by **80%**.

PROJECTS

Ctrl-ARM | Python, C++, TensorFlow, scikit-learn, Pandas, Electron, React, MyoWare 2.0, Google ADK

Sep 2025

- Won **1st Place** in the **Microsoft AI Challenge** at **ShellHacks 2025** out of 245 projects for building a muscle-controlled accessibility interface using **EMG**, **IMU**, and **voice input**.
- Built a multimodal gesture recognition pipeline combining **EMG** and **IMU** signals, achieving **90% gesture accuracy** through GPU-accelerated **TensorFlow** models and sensor fusion.
- Implemented real-time multimodal control by integrating **Google ADK**, **Gemini**, and **Whisper**, enabling natural language commands and gesture-driven app switching within an **Electron + React** desktop overlay.

Riffs | Next.js, React, TypeScript, Tailwind CSS, Pitchy, Vercel

Apr 2025 – May 2025

- Won **1st Place** for **Best App** at **Bitcamp 2025**, selected from **60+ projects**.
- Built a real-time pitch detection pipeline that converts hummed melodies into editable guitar tablature using **Pitchy**.
- Integrated a real-time guitar sample playback with tempo control using **Pitchy** and **FL Studio**, and developed a game-like UI overlay with camera-driven animations to enhance interactivity and learning by **70%** using it

SightSync | Python, OpenCV, MediaPipe, PyAutoGUI, Pygame

Apr 2025 – May 2025

- Built a **system-level accessibility tool** enabling **hands-free OS control** combined **eye tracking** and **voice input**.
- Implemented real-time head and eye tracking with **MediaPipe** and **OpenCV**, achieving **90%** cursor map accuracy.
- Enabled **OS-level mouse and keyboard automation** by mapping inputs to system actions via **PyAutoGUI**.

TECHNICAL SKILLS

Programming Languages: Python, C, C++, C#, Java, HTML, CSS, JavaScript, TypeScript, Kotlin, SQL

Frameworks/Libraries: React, Angular, React Native, Django, Tailwind CSS, Node.js, Next.js, tRPC, Drizzle, OpenCV, MediaPipe, PyAutoGUI, Pandas, scikit-learn, Ollama, AWS Bedrock, Google ADK, Electron, TensorFlow, Pygame

Developer Tools/Platforms: Git, GitHub, Docker, Kubernetes, MacOS, Linux, Windows, PostgreSQL, SQLite, Google App Engine, AWS, VS Code, Vercel, Blender, Onshape, Coolify, F5 Load Balancer, pnpm, Bun, Node.js, JUnit, Mockito, H2