Daniel J Efres

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EDUCATION

University of Central Florida — Orlando, FL
Bachelor of Science in Computer Science, Minor in Mathematics — *Expected Grad: May 2027*

EXPERIENCE

Secretary — Jan 2025 – Present
Knight Hacks — *Orlando, FL*
- Lead as the Secretary for **Knight Hacks**, UCF's largest student-run technology organization with over **800 members**, guiding a 60-person team to organize events that develop confident and capable student engineers.
- Directed the planning and execution of **Knight Hacks VIII**, a university-wide hackathon with **1,000+ participants** and **180+ projects** submitted across three days.
- Personally secured **$30K+ in sponsorships** from **F500 Companies**, months ahead of **Knight Hacks VIII**.

Software Engineering Intern — Feb 2025 – Present
UCF Center for Distributed Learning — *Orlando, FL*
- Optimized **React**/**Django** web applications serving **60,000+** users by refactoring 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**.
- Optimized chat management system by implementing intelligent threading algorithm, reducing server load by **75-85%** and database query overhead by **90%**.

Software Engineering Intern — May 2025 – Aug 2025
Bank of New York — *Lake Mary, FL*
- Spearheaded a greenfield enterprise API initiative as a solo developer, architecting and implementing RESTful services in **Java Spring Boot** affecting **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 **3×** and reducing deployment failures by **100%**.
- Integrated with legacy **Oracle** databases through schema discovery and reverse engineering, delivering **4+ production-ready endpoints** to firm-wide production with **zero post-release defects** and improving data retrieval speeds by **80%**.
- Achieved **100% unit and integration test coverage** using **JUnit**, **Mockito**, and **H2**, implementing containerized secret management that eliminated **15+ hours** of weekly manual security audits across development teams.

PROJECTS

Ctrl-ARM | Python, TensorFlow, scikit-learn, Pandas, CUDA, 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**.
- Designed a multimodal system with **MyoWare EMG sensors**, **BLE modules**, and **XIAO Sense** hardware, achieving **90% gesture accuracy** through **GPU-accelerated TensorFlow** and sensor fusion.
- Integrated **Google ADK** and **Gemini + Whisper** for contextual app switching, natural language control, and real-time gesture mapping within an **Electron + React** overlay.

Riffs | React, Next.js, TypeScript, Tailwind CSS, Pitchy, FL Studio — Apr 2025 – May 2025
- Won **1st place** for **Best App** at **Bitcamp 2025**.
- Created a music tool which converts hummed melodies to editable guitar tabs via pitch detection.
- 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 tool for hands-free control of the OS via **eye tracking** and **voice commands**.
- Mapped head and eye movements to cursor with **90%** accuracy using **MediaPipe** and **OpenCV**.
- Integrated **PyAutoGUI** for OS-level mouse and keyboard commands used with one's voice.

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