Karson Oakley

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Education

Faulkner University – Montgomery, AL Expected May 2029
Bachelor of Science in **Mechanical Engineering**, **Computer Science**, and **Mathematics** (concurrent)
GPA: 3.76
Associate of Science in Computer Information Science, December 2024

Harding University – Searcy, AR Aug 2025 – May 2026
Mechanical Engineering coursework (transferred to Faulkner) • Dean's List, Spring 2026

Alabama Christian Academy – Montgomery, AL – *High School Diploma* May 2025
Relevant Coursework: Statics, Materials Science & Manufacturing Processes, Calculus III, Discrete Mathematics, Intro to Machine Learning, Computer Programming for Engineers, Object-Oriented Programming

Mechanical Engineering Experience

Harding Bison Baja (Baja SAE) – *Team Member* Aug 2025 – May 2026
- Machined parts on manual mills for the off-road competition vehicle, including the fire extinguisher mount
- Coped tubing for vehicle fabrication, bled brakes, and tore down previous-year vehicles
- Competed with the team at Oklahoma State University's Fall Frenzy off-road race (Stillwater, OK, Nov 2025)

Machined Aluminum Pen Holder – *Materials Science & Manufacturing Processes Lab*
- Machined a two-part aluminum assembly on manual mills and lathes: a stepped base with a counterbore, a countersink, and a hand-tapped 1/2-13 hole, plus a turned rod that threads into it
- Worked to ±0.010" tolerances from supplied engineering drawings

Marble Roller Coaster – *Intro to Engineering, Harding University* Fall 2025
- Out of 17 teams: 1st place Crowd Favorite and tied 1st for the Pioneer Award (best engineering)
- Proposed the drop-through section, where the ball falls to a lower track; modeled part of the run in MATLAB

Digital Graffiti Spray Can (in progress) – *Onshape, KiCad, 3D printing, ESP32-S3*
- Built two prototypes for digital painting, the second a 3D-printed body designed in Onshape
- Redesigning the trigger around a plunger and a TMAG5273 Hall-effect sensor over I^2C
- Laid out a KiCad carrier PCB for the force-sensor version; tracks position in space with a Vive Tracker

Technical Projects

Live AI Captioning System – *Python, FastAPI, Deepgram*
- Live captions with translation for every Faulkner chapel, read by students on their phones
- Built most of the app and backend, with local or cloud speech and translation models; designed the frontend

Aura – 2nd Place, Eagle Institute & AUM Innovation Challenge – *Team of 4* Fall 2026
- Built the app prototype demoed to judges for Aura, a free AI life-skills coach for ages 16–24
- Led safety design, including a crisis layer where a separate model screens messages and routes users to 988

Extending KNN Classifiers (Research Paper) – *Intro to Machine Learning*
- Wrote a paper extending KNN with three weighted-voting methods on the Statlog Vehicle Silhouettes data
- Implemented each from scratch in Python; WKNN and DWKNN cut accuracy variation across k by ~27%

Skills

CAD & Fabrication: SolidWorks, Onshape, KiCad, technical drawings, machining (mill, lathe, tapping), 3D printing
Programming: Python, C#, MATLAB/GNU Octave, MicroPython (Raspberry Pi Pico)
Tools: Excel (lab data analysis and graphing), Git/GitHub, LaTeX

Work Experience & Leadership

Yellowhammer Exterior Cleaning LLC – Montgomery, AL – *Founder & Owner* Jul 2024 – Present
- Run a one-person business serving residential clients and a recurring commercial account held for two years
- Handle bidding, scheduling, equipment maintenance, chemical mixing, and bookkeeping

Churches of Christ – Montgomery, AL – *Preacher & Public Speaker* Oct 2024 – Present
- Preach and teach for multiple congregations, including devotionals at an assisted living facility
- Research, write, and deliver every message, turning complex material into clear, structured talks