Arda Griffin

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Experience

Cornell Organic Robotics Lab Ithaca, NY

Researcher – Wave Energy Harvester 05/2024 – 09/2025

- Designed experiments with CAD and custom PCBs to measure turbine efficiency and origami pressure chambers. Validated actuator performance under **2 kN** load.
- Developed gaskets and peroxide pressure chambers for oxygen generation. Automated analysis of 15,000+ MATLAB datasets on peroxide decomposition; designed PCB cooling system to ensure accurate data capture.

Cornell Baja Racing Ithaca, NY

Rear Link Bars – Suspension Design 05/2024 – Present

- Engineered rear suspension wishbone system to withstand **20+ load cases** while minimizing weight and cost.
- Applied Finite Element Analysis (FEA) with accurate constraints and contact models to ensure structural reliability.
- Currently redesigning spherical and tab attachment systems, improving fatigue strength and manufacturability while potentially reducing weight by **1–2 lbs**.

Cornell Baja Racing Ithaca, NY

Tire and Rim Suspension Project 10/2024 – 04/2025

- Modeled and tested rim cutouts in ANSYS to endure competition cycles with wheel loads exceeding **700 lbf**.
- Gained welding proficiency through fabrication of car frame and replacement of suspension components including shocks, links, and uprights.

Cornell Rapid Prototyping Lab Ithaca, NY

Student Technician 10/2024 – Present

- Trained in additive manufacturing with Onyx, ABS, TPU, PLA, and resin printers (Formlabs and Stratasys)
- Supported graduate engineering projects by fabricating high-quality wind turbine components, enabling timely project completion.

Code Red Robotics – FIRST Robotics Competition Ithaca, NY

Mechanical Lead 09/2020 – 05/2024

- Performed **Tolerance analysis** on bearing/press fit/shaft assemblies to ensure proper sprocket alignment without external tensioners.
- Designed, integrated, and maintained subsystems for climbing, acquisition, and game piece manipulation; contributed to multiple **semifinalist regional finishes**.
- Trained new members on rapid prototyping tools (**laser cutting, 3D printing, plasma cutting**) and implemented additive manufacturing for lightweight components.

Education

Cornell University Ithaca, NY

B.S. Mechanical Engineering (Expected) 05/2028

Relevant Coursework *(By Spring 2026)*

Statics and Mechanics of Solids, Thermodynamics, Mechanical Synthesis, Engineering Dynamics, Introduction to Circuits and Circuit Theory, Physics III: Waves, Linear Algebra, Differential Equations, German Studies I-II (Language level A2-B1)

Technical Skills

- **CAD/FEA:** SOLIDWORKS, Fusion 360, Inventor, ANSYS
  - Designed a NASA Lunar Gateway storage module for GrabCAD's Artemis competition; performed stress and fatigue analysis under sustained and shock loads, authored technical report, and placed Semifinalist.
- **Programming/Data Analysis:** MATLAB, Python, R
- **Manufacturing:** CNC machining, welding, milling, lathe operation, 3D printing (Onyx, ABS, TPU, PLA, resin)
- **Electronics:** Soldering, PCB design, Electronic Heatsink/Cooling Design
- **Other:** Turkish Fluency and Intermediate German (A2-B1)

Projects & Certifications

- Restored and customized a 1997 Toyota Celica GT by fabricating and installing custom exhaust and suspension components.
- Pursuing certification for CNC lathe operation to manufacture spherical bearing housings and spline shafts.