Jidechukwu Owo

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EDUCATION

University of Michigan | Dearborn, MI | (Aug 2022 – May 2026) | *Received BSE in Mechanical Engineering*| GPA: 3.45/4.00

Honors and Awards: *Dean's Honor List* recipient; *Altair #OnlyForward Scholarship* recipient; *Non-Resident Scholarship* recipient

SKILLS

Technical Skills*:* CAD/Design: SolidWorks, CATIA, Inspire, OnShape; **FEA**: HyperMesh; Optistruct, Radioss, LS-DYNA; **CFD**: ANSYS Fluent; **Machine Learning**: physicsAI; **Programming:** MATLAB, Python, "C"; **Prototyping**: 3D Printing

Soft Skills: Creativity, Adaptability, Communication, Public Speaking, Innovation, Leadership, Collaboration

RELATED EXPERIENCE

Application Engineering Intern, *Altair* | Troy, MI | (40 hrs/week) | (May 2025 - August 2025)

- Collaborated with the GTT ModViz Americas team in customer support meetings, troubleshooting real-world HyperMesh and OptiStruct workflows for industry clients
- Conducted a crash analysis project evaluating the feasibility of Captain America's shield impacting a rigid wall, using Radioss
- Presented project results and my intern experience at a global, company-wide live event

Application Engineering Intern, *Altair* | Troy, MI | (40 hrs/week) | (May 2024 - October 2024)

- Built a physics-based ML model using HyperMesh, HyperView, Inspire, and physicsAI to predict stress and displacement results of a flanged pipe for Oil & Gas applications
    - physicsAI requires historic data to produce predictions, so I also used morphing (HyperMorph) and other CAD techniques to produce 27 different CAD models & result files (via Optistruct) as an alternative
- Presented my work at a global company-wide live event
- Concluded by compiling my work into a video series that walks users through the general process of producing an accurate physicsAI ML model (project creation, creating datasets, model training, model testing, and making a prediction)

Recovery Co-Lead, *MASA-Dearborn*, *UM-Dearborn* | Dearborn, MI | (5 hrs/week) | (August 2022 - June 2026)

- Responsible for designing, prototyping, testing, and assembling our team's avionics bay via Inspire and 3D printing
- Ran CFD on a single air-brake flap at 25°, 50°, and 75° to measure drag force, drag coefficient, and visualize flow behavior at Mach 1. This gave our team valuable information for tuning air-brake control systems, helping us reliably reach 10k ft.
- Sewed parachute components by hand, applying design selection criteria to finalize the parachute configuration

RELEVANT COURSE PROJECTS

Latissimus Dorsi Adduction Machine (Patent Pending) - *Senior Design, ME 4671* | (January 2026 - Present)

- Designed and prototyped a novel biomedical workout machine that trains the user's latissimus dorsi, while minimizing bicep and forearm fatigue. This prevents the arm muscles from being a limiting factor, allowing for a more efficient movement. Working towards commercialization.

Spur Gears in Contact - *Finite Element Methods with Application, ME 410* | (April 2026)

- Conducted nonlinear contact FEA of spur gear teeth in HyperMesh and LS-DYNA, running explicit dynamic simulations across steel and aluminum to map Von Mises stress distribution and identify fillet stress concentrations as the critical failure region.

Fan Efficiency Experiment - *Thermal Fluids Lab, ME 379* | (December 2025)

- Designed and conducted a fan efficiency experiment using a custom duct system, including 3D printed blades, pitot tube measurements, and analysis of pressure, flow, and performance across blade geometries

Gearbox Design - *Design and Analysis of Machine Elements, ME 3601* | (April 2025)

- Designed and validated a two-stage gearbox (4 gears, 3 shafts, 6 bearings) using MATLAB gear calculations, shaft loading analysis (FBDs, BMDs, torque), and CAD modeling with material and bearing selection (SKF) and engineering drawings

INTERESTS: Languages, sports (basketball, football, table tennis), music, math tutoring, student government (Senator), NSBE