David Claffey

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EDUCATION

Georgia Institute of Technology – GPA: 3.92 — Atlanta, Georgia
- B.S. Mechanical Engineering — *August 2020 – December 2024*
- Computer Science Minor, Intelligence and AI
- M.S. Computer Science — *January 2025 – TBD*

EXPERIENCE

Tormach — Madison, Wisconsin
Software Development Engineer Intern — *May – August 2024*
- Developed **automation products** using QML, GDK, HAL, LCEC, NC, ROS, and Docker. Conducted **root cause analysis** for bugs and feature additions. **Shipped software** in recent releases including changes to UI, robotic planning, and new features.
- Outcomes: Product proof of concept, new PathPilot features, embedded hardware, IO boards and electronics.

Formlabs — Somerville, Massachusetts
SLA Print Process R&D Intern — *January – August 2023*
- Created and performed experiments studying polymerization dynamics, **energy accumulation**, optical stack design, and new material chemistry. Designed current **Form4 hardware**: recoater, tank film, 405nm LCD, and **print optimization** algorithms.
- Outcomes: Studies on Thermal Fluids, Optics, & Adhesion models. Form4 hardware and software.

Tosoh SMD — Columbus, Ohio
Mechanical Engineering Intern — *May – August 2021*
- Used FEA to thermally assess 7000 Ton **Cold Forges** for increased manufacturing of high purity **sputtering targets**.
- Outcomes: Recommendation on press apparatus lifetime. FMEA and Workflow for new manufacturing cell layouts.

RESEARCH

GA-AIM / Beam Team Labs — Atlanta, Georgia
AI Manufacturing Researcher – AMPF — *September 2022 – Current*
- Implemented CV and PID to automate **argon flow control** on the Optomec **DED** (Directed Energy Deposition) Hybrid CNC.
- Developing Magnetic **Computed Tomography** reconstruction algorithms for in-situ void/annihilation detection.
- Outcomes: PID control and automation for mass delivery, novel MCT scanning technology, CT backpropagation.

DART Labs — Atlanta, Georgia
ML & Bio-kinematics/kinetics Researcher — *August 2021 – August 2023*
- Developed a multi-software pipeline for EMG **motion primitive classification** models on a wearable **Hip Exoskeleton**.
- Created XGBoost trees and TCNs for predicting **motion intent**, tracking model metrics with WANDB and Confusion Matrices. Conducted Forward Feature Selection and Hyperparameter tuning based on OSIM data.
- Outcomes: Subject-Independent model with **95% accuracy** motion intent prediction using just 3 Inertial Measurement Units.

LEADERSHIP

Coffee Company Cofounder — Atlanta, Georgia
Fluid Chilling Technical Lead — *July 2024 – Current*
- Modeling and Simulation of **Thermoelectrics** and **Vortex Compressed Air** chilling mechanisms for rapid fluid heat transfer.

Flowers Invention Studio — Atlanta, Georgia
Prototyping Instructor & CNC Master — *July 2022 – Current*
- Responsible for EMCO E350, Tormach PCNC1100, PocketNC, Manual Mill, and CamMaster **machine training** and manufacturing for campus competition teams and research labs.
- Outcomes: Streamlined CAM training. Knowledge of 4th axis indexing, workholding, NC Gcode, tool wear, manufacturing.

SKILLS

Software: Python, C++, MATLAB, Java, ROS, Docker, PyTorch, tf, webots, XGBoost, Wandb, OpenSim, SQL, LCEC, HAL
Analytics: FEA, CAD, Topology, Physics Simulation, Machine Learning, Data Acquisition, Visualization and Exp Design
Manufacturing: CNC, Industrial Robotics, SLA, SLS, Waterjet, Laser, Fiber, Ink-jetting, Metal additive, Thin Film
Mechanical: Fluid Dynamics, Heat Transfer, Solid Mechanics, Control Systems, Magnetics, Machine Design, Hardware