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 framework** software using QML, GDK, HAL, LCEC, NC, ROS, and Docker. Conducted **root cause analysis** for bugs and feature additions, including new probing routines and hardware IO expansions.
- Outcomes: Product proof of concept, new **Pathpilot** features, embedded hardware, IO expansions.

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

Tosoh SMD Columbus, Ohio
Mechanical Engineering Intern *May – August 2021*
- Investigated **electrical phase anomalies** throttling manufacturing volume. Used **FEA** to assess 7000 Ton **Cold Forges**.
- 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*
- Used CV and PID to **automate argon flow control** on the Optomec DED (Directed Energy Deposition) Hybrid machine.
- 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 Co-founder 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
Metal CNC Master *July 2022 – Current*
- Responsible for EMCO E350, Tormach PCNC1100, PocketNC, Manual Mill, and CamMaster **machines 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