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

EXPERIENCE

Tormach **Madison, Wisconsin**

Software Development Engineer Intern *May – August 2024*

- Developed software from NC level to ROS containerization and computer vision. Worked on novel automation frameworks. Supported current software bugs and improvements, including new probing routines and hardware layer abstraction (HAL)
- Skills: HAL, ROS, Docker, QML, GDK, Python3/2, NC, LinuxCNC, DNS, embedded/hardware

Formlabs **Somerville, Massachusetts**

SLA Print Process Next Gen R&D Intern *January – August 2023*

- Designed and performed experiments studying polymerization dynamics, energy accumulation, optical stack design, and new material chemistries. Created algorithms optimizing print parameters and quality.
- Skills: Thermal Fluids, Optics, Proprietary Software Development, Adhesion models, SLA Theory

Tosoh SMD **Columbus, Ohio**

Mechanical Engineering and Equipment Intern *May 2021 – August 2021*

- Investigated electrical anomalies hindering manufacturing, statistically analyzed data to diagnose cyclic behavior.
- Used static/dynamic FEA, CAD, and FMEA to assess high-force press apparatus for 30% greater force operation.

LEADERSHIP

Flowers Invention Studio **Atlanta, Georgia**

Metal CNC Master *July 2022 – Current*

- Responsible for machine/sponsor acquisition and area training/maintenance. Completed Titans of CNC training program and several projects requiring novel fixturing methods, 4th axis indexing, and 3D tool paths.
- Skills: Fusion CAM, G-wizard, Tormach PCNC 1100, EMCO E350, Pocket NC Mill (5-axis), CNC Lathe.

PROJECTS

GA-AIM / Beam Team Labs **Atlanta, Georgia**

Artificially-Intelligent-Manufacturing Researcher - Advanced Manufacturing Pilot Facility *September 2022 – Current*

- Used computer vision and advanced manufacturing research regarding the Optomec DED (Directed Energy Deposition) CNC. Developing Magnetic Computed Tomography for in-situ void/annihilation detection for frequencies up to 20 kHz.
- Skills: Advanced Manufacturing, OpenCV, Tensorflow, Embedded Systems, Fluid Dynamics, Controls.

DART Labs **Atlanta, Georgia**

Machine Learning and Bio-kinematics/kinetics Researcher *August 2021 – August 2023*

- Developed an offline pipeline used in exoskeleton sensor EMG analysis and motion primitive segmentation/classification. Utilized variable feature sets, confusion matrix analysis, forward feature selection, and hyperparameter tuning. Implemented online network to predict user-motion intent and inform actuation in dynamic environments with up to 95% accuracy.
- Skills: Temporal Convolutional Networks, XGBoost, WANDB, Sklearn, Pytorch, Matlab, OSIM, VICON, EMG filtering.

SKILLS

Software: Python, C++, Matlab, Java, ROS, Docker, PyTorch, tf, webots, XGBoost, Wandb, OpenSim, SQL, LinuxCNC, HAL
Analytics: FEA, CAD, Topology, Mathworks Simulink, Machine Learning, Data Visualization and Design, Large Codebases
Manufacturing: CNC, Industrial Robotics, SLA, SLS, Waterjet, Laser, Carbon Fiber, Polymer Printing, Ink-jetting
Mechanical: Dynamics, Fluid Dynamics, Deformable Bodies, Control Systems, FEA, CAD, CAM, Manufacturing
Communication: Proposal Design, Professional Writing, Admin Collaboration, Presenting/Public Speaking, Team Leadership