Nolan Knox

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EDUCATION

Georgia Institute of Technology, Atlanta, GA — Expected Graduation: May 2021
Bachelor of Science in Mechanical Engineering, **GPA: 4.00/4.00**
Exchange Program: Nanyang Technological University, Singapore (Spring 2020)

WORK EXPERIENCE

SLA Additive Manufacturing Researcher, Atlanta, GA — August 2020 – December 2020

- Designed a form of resin 3D printing that eliminates the need for solid support structures
- Processed surface wettability tests using MATLAB to determine minimum resin layer thickness
- Analyzed deflection of thin resin layer through force analysis and experimental curing

Mechanical Engineering Intern at Sun Hydraulics, Sarasota, FL — May 2019 – August 2019

- Detected malfunctions while operating autonomous valve test stand in manufacturing facility
- Identified quality issue through comparative analysis of manual and automated valve testing
- Designed attachment for pneumatic actuator that increases valve testing by about 2,400 per year

Ben T. Zinn Combustion Laboratory Researcher, Atlanta, GA — May 2018 – August 2018

- Diagnosed mechanical issues with critical rig components
- Applied thermodynamics and combustion principles to model combustion reaction trends

EXTRACURRICULAR ACTIVITIES

Flowers Invention Studio, Prototyping Instructor (Wood Master) — March 2019 – Present
Student-run makerspace equipped with machines such as 3D printers, laser cutters, and water jets

- Train users how to properly operate tools and machinery
- Maintain wood room through fixing tools, ordering supplies, and providing advanced trainings

Wreck Racing — January 2018 – May 2019
Georgia Tech club that builds and designs a car for competition with a budget of $2000

- Utilized machining tools to fabricate car components such as attachment for Panhard bar

PROJECTS

Teleoperated Vehicle with Robotic Arm — September 2020 – December 2020
Developed vehicle with a gripper arm with the ability to pick up different objects without crushing them

- Controlled mechatronic system using TI MSP432 programmed in C
- Utilized encoders and pressure sensors for PID feedback control
- Fabricated parts through 3D printing, laser cutting, and water jetting

Idea to Prototype: Sun Roots — August 2020 – December 2020
Designed and created invention that easily and effectively anchors beach umbrellas into sand

- Experienced full process of idea generation to working prototype
- Created designs through use of SolidWorks and shop tools such as 3D printing and water jetting

Autonomous Robot Competition — May 2018 – July 2018
Created autonomous robot that completed tasks while competing against other teams

- Programmed system using LabVIEW for National Instruments myRIO
- Used mechanical design tools such as SolidWorks to generate subsystem layout

SKILLS

Software: SolidWorks, NX (basic FEA knowledge), CHEMKIN, Microsoft Office, Inkscape
Programming: MATLAB, C, LabVIEW, Java
Instrumentation: Mechatronics, 3D Printing (FDM and SLA), Waterjet, Laser Cutting, Lathe, Mill
Elective Courses: Fundamentals of Mechatronics, Math Methods in Engineering, Machine Design