# BRIAN WHINERY

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**Objective:** Seeking a full time position as a Mechatronics or Mechanical Engineer

**Research Experience:**

**Senior Research Assistant** June 2020 – Present
Western New England University, Springfield, MA

- Developed program to analyze phase change materials using MATLAB
- First author on research paper presented at 13th International Conference on Machine Vision in Rome, Italy November 2020
- Developed algorithm to analyze condensation in fuel cells

**Publications:** Whinery, B., Gulak, Y., Chauhan, V., Zhao, J., Benner, J., & Ye, F. (2021, January). Thermal image processing for feature extraction from encapsulated phase change materials. In *Thirteenth International Conference on Machine Vision* (Vol. 11605, p. 116050K). International Society for Optics and Photonics.

**Education:**

Western New England University, Springfield MA
**MS Mechanical Engineering - Mechatronics Concentration** May 2021
**GPA: 4.000**
**BS Mechanical Engineering - Mechatronics Concentration** May 2020
**GPA: 3.832 College of Engineering Honors Program**

**Courses:**

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|---|---|---|
| Data Acquisition & Processing | Computer Programming ENGR | Dynamics |
| Electricity & Magnetism | Calculus I, II & III | Mechanics of Materials |
| Mechanics | Measurement Computing | Probability & Statistics |
| Mechanics I - Statics | Differential Equations | Thermodynamics I |
| General Chemistry I | Circuits I - Electrical ENGR | Mechatronics |
| Engineering Analysis I | Mechanical Laboratory I & II | Materials Science |
| Electrical Energy Systems | Fluid Mechanics | Mechanical Vibrations |
| Design Mechatronic Systems | Kine & Cntrl Electro-Mech | Heat Transfer |
| Product Dev & Innovation | Design of Mach Elements | Fundamentals of Flight |
| Engineer Economic Analysis | Computer Aided Engineer | Dsgn of Alt Energy Sys |
| Advanced Fluid Mechanics I | Adv Cont Disc Syst Analy | Systems Integration |
| Design of Experiments | Intelligent Motion Control | Gas Dynamics |
| Engineering Management | Advanced Mechatronics | |

**Computer Skills:**

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|---|---|---|
| Microsoft Office | SolidWorks | Arduino IDE |
| ICAPS | MATLAB | LabVIEW |
| Visual Basic | Simulink | Finite Element Analysis |
| Working Model 2D | PLC Ladder Logic | Siemens NX |

**Work Related Experience**:

**Laboratory Assistant** Oct. 2017 – Mar. 2020
Western New England University, Springfield, MA

- Learned to use 3D printer
- Ensured student safety with equipment
- Maintained lab cleanliness

**Projects:**

**Designed Feedback Controllers for DC Servo Motor** Fall 2020 – Winter 2021

- Designed and optimized several feedback controllers using Simulink with MATLAB
- Each controller applied a different method for control

**Senior Design Project: Mechatronics Sorting Station** Spring 2020

- Conceptualized, designed, and built autonomous system that can sort cylinders based off various characteristics
- Design was based off my previous project that sorted foam cubes interfaced with Visual Basic
- Project was intended to be integrated as one of four modules into a full system

**Design of an Automatic Hacksaw Tester** Spring 2019

- Used Siemens NX 12 to develop the design of a hacksaw testing rig to analyze cutting speed and durability of saw blades overtime for various hacksaws
- The design implements sensors, a PLC, and pneumatic systems
- Finite element analysis was used to determine validity of the design

**Mine Sweeper Bot** Spring 2017

- Designed a robot that could follow a path autonomously and sweep items of a table
- Unique design that swept items off the table before reaching the end

**Joust-Bot Challenge** Fall 2016

- Designed a robot that successfully popped competitors' balloons with projectiles
- Used Arduino IDE to program robot
- Created parts using SolidWorks

**Achievements:**

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|---|---|
| Passed FE Mechanical Exam EIT License Number: 26267 | June 25, 2020 |
| Honors Program Senior Award | Spring 2020 |
| Tau Beta Pi Honor Society | Fall 2019 – Present |
| Alpha Lambda Delta Honor Society | Fall 2017 – Present |

**Activities:**

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|---|---|
| American Society of Mechanical Engineers | 2016-Present |
| Study Abroad: South Africa | May 2018 |