Joshua R. Wiens

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Education

Bachelor of Science – Mechanical Engineering — *University of Oklahoma, Norman, OK, May 2017*

- Minor: Electrical and Computer Engineering
- **Primary Focus**: Electromechanical Systems

Skills

Hardware/Design

- 3D CAD (Solidworks/Autodesk)
- CNC Toolpathing
- Finite Element Analysis
- Fabrication/Installation of Cable & Wiring
- Electrical Troubleshooting
- Control of Electromechanical Devices
- Extrusion 3D Printing

Programming/Scripting

- VBA with Excel
- C/C++
- Python 3
- MATLAB
- LabVIEW (Former CLAD)
- Embedded Digital Control
- Data Acquisition & Processing

Interpersonal

- Leadership
- Team Communication
- Information Presentation
- Personnel Training
- Customer Service

Professional Experience

Mechanical Project Engineer — *Midwest Cooling Towers, June 2018 – Present*

- Layout CNC toolpaths for production of parts; final checkpoint between design and production.
- Maintain various Excel spreadsheets used for cost and material analysis.
- Apply standards and codes to produce estimates for customers based on given design criteria.
- Produce 3D models of custom parts and apply FEA stress analysis.

Systems Engineering Internship — *Ion Beam Applications (IBA), Nov 2015 – June 2018*

- Maintenance of proton therapy system including various mechanical and electrical subsystems.
- Troubleshooting and resolving day-to-day system failures using various software and measurement tools.
- Trained to work in hazardous environments including: at heights, high voltage, live electricity, and radiation.

Academic Experience/Achievements

Capstone Team Leader

- Managed simultaneous development of two modular electro-hydraulic subsystems including test systems.
- Fabricated control/power infrastructure for electrical and hydraulic power distribution.
- Developed control module capable of independently controlling each of our 3 subsystems.
  - Designed hierarchical control system for simultaneous sensor acquisition/processing and control.
  - Fabricated microcontroller network via the I^2C serial communication protocol.
  - Capable of receiving 5 Hall effect sensor inputs and control 2 stepper or brushless DC motors using 2 cables.

Autonomous Design Competition

- Successfully applied use of hexagonal matrix for ideal strength-weight characteristics in 3D printed chassis.
- Designed, fabricated, and installed electrical control and power subsystems.
- Developed embedded control system applying digital signal processing to external sensor feedback.
- Achieved highest score out of 30+ 4-man-teams with an unmatched 2 flawless attempts.

References

- Shane Schmidt – Former Vice President Midwest Cooling Towers;
- John Malton – Site Manager IBA, Oklahoma City, OK; (405) 549-5028 John.Malton@iba-group.com
- See linkedin.com/in/jrwiens for examples of some of the experiences mentioned above.