Joshua R. Wiens

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# Education

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

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

# Skills

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| Hardware/Design | Programming/Scripting | Interpersonal |
| * 3D CAD (Solidworks/Autodesk) * CNC Toolpathing * Finite Element Analysis * Fabrication/Installation of Cable & Wiring * Electrical Troubleshooting * Control of Electromechanical Devices * Extrusion 3D Printing | * VBA with Excel * C/C++ * Python 3 * MATLAB * LabVIEW (Former CLAD) * Embedded Digital Control * Data Acquisition & Processing | * Leadership * Team Communication * Information Presentation * Personnel Training * Customer Service |

# Professional Experience

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| 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.

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| 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

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| 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 I2C serial communication protocol.
  + Capable of receiving 5 Hall effect sensor inputs and control 2 stepper or brushless DC motors using 2 cables.

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| 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](mailto:John.Malton@iba-group.com)
* See [linkedin.com/in/jrwiens](https://www.linkedin.com/in/jrwiens) for examples of some of the experiences mentioned above.