Sean McGuire

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https://mcguires5.github.io/SeanMcGuire/ • McGuires5

Previous Employment

II-VI Advanced Materials **Pine Brook, NJ**
Engineering Assistant *June 2014–Present*

- Developed a bar-code system to track material throughout the facility while effectively eliminating the repetitive process of typing and writing the crystal ID.
- Wrote macros in excel to generate data sheets which are sent directly to customers, these data sheets contain information sourced from a SQL database
- Wrote JMP Scripts (Statistical Package) to automatically generate SPC charts for many processes throughout the facility
- Worked with another intern to developed a novel technique employing software to find micropipe defects in SiC substrates
  - Software was written in Matlab to analyze images producing location and density data for micropipe defects
  - The Matlab script generates maps of the wafers showing the defect densities across the wafer
  - Assisted in writing the standard operating procedure for the procedure and use of software
  - *Ushered this system into production where it now saves a significant amount of material and labor hours (figures covered under NDA)*
  - **I have presented this process at the ICSCRM (International Conference for Silicone Carbide and Related Materials) 2017 conference and have authored a paper which was published in the ICSCRM journal**
    DOI: https://doi.org/10.4028/www.scientific.net/MSF.924.527
- Retrofitted second hand equipment and integrated system into production
  - Wrote software in python to allow the machine to interface with a SQL database
  - Wrote a procedure for the process
  - Traveled to Mississippi to configure the system. While on site I also trained operators and engineers in the operation and maintenance procedures.
- Entrusted with extremely sensitive and proprietary schematics, technologies, and code

Education

Rowan University **Glassboro, NJ**
Undergraduate: Electrical and Computer Engineering Major (GPA: 3.586) *2015–present*
Awards: II-VI Foundation Scholarship (2015 2016 2017), Dean's List (Fall and Spring of 2015 2016, Spring 2017 2018)

Technical and Personal skills

- **Programming Languages:** Python, C, C++, C#, Matlab, Verilog, Visual Basic, Java
- **Industry Software Skills:** Microsoft Office Suite, Microsoft Access, Microsoft SQL Database, Diptrace, JMP, Minitab, Spice, Solidworks, ANSYS, Modelsim, Git, LaTeX
- **Other Engineering Skills:** Scrum/agile development, Embedded Design, Processor Architecture, Image Processing, Machine Learning Algorithms (KNN, Bayes, MLP, SVM, Linear/Logistic Regression), Deep Learning Architectures (Feed Forward Neural Networks, Recurrent Neural Networks, Convolutional Neural Networks, Long Short Term Memory Networks)

Organizations and Volunteer Experiences

- Captain Intramural Bowling Team 2015–present
- Vice President of Rowan Quidditch Team 2017
- IEEE Student Branch Member 2015–Present
- IEEE Student Activities Conference Physics Competition Chair 2017
- IEEE Prof Hacks Committee Lead 2017