Sean McGuire

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

Previous Employment

II-VI Advanced Materials   **Pine Brook**
Engineering Assistant, NJ   *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

- 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 mircopipe 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 will be published in the ICSCRM journal**

- Retrofitted a second hand machine 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 physical machine, and settings. While on site I also trained operators and engineers in the systems normal operation and maintenance.

- Entrusted with extremely sensitive and proprietary schematics, technologies, and code

Education

Rowan University   **Glassboro, NJ**
Undergraduate: Electrical and Computer Engineering Major   *2015–present*
Awards: II-VI Foundation Scholarship (2015 2016 2017), Dean's List (Fall and Spring of 2015 2016)
GPA: 3.55

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, Feed Forward Neural Networks, Convolutional Neural Networks)

Organizations and Volunteer Experiences

- Captain Intramural Bowling Team 2015–present

- Vice President of Rowan Quidditch Team 2017–present

- IEEE Student Branch Member 2015–Present

- IEEE Student Activities Conference Physics Competition Chair 2017

- IEEE Prof Hacks Committee Lead 2017