

Sean McGuire

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<https://mcguires5.github.io/SeanMcGuire/> • [McGuires5](#)

Previous Employment

II-VI Advanced Materials

Engineering Assistant

Pine Brook, 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
- Worked with another intern to develop 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 will be published in the ICSCRM journal
- 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

Undergraduate: Electrical and Computer Engineering Major

Awards: II-VI Foundation Scholarship (2015 2016 2017), Dean's List (Fall and Spring of 2015 2016)

GPA: 3.55

Glassboro, NJ

2015–present

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