

# Zachary C. Mathews

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## CERTIFICATIONS

**EIT: Engineer-In-Training** – [EIT029482](#)

Feb. 2023

**CCNA: Cisco Certified Network Associate** – [CSCO14109529](#)

Mar. 2022

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## EDUCATION

**B.S. Electrical Engineering** – [Georgia Institute of Technology](#) – Atlanta, GA

Aug. 2015 - Dec. 2020

– GPA: 3.19/4.00

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## EXPERIENCE

**Independent BIM Software Developer** – [Alzumal, LLC](#) – Atlanta, GA

Jan. 2023 - Present

- Designed and developed a sophisticated Revit add-in for real-time point-by-point lighting calculations using raytracing technology. *Beta releases are currently available.*
- Implemented complex interop between managed C# and native C++ code to ensure seamless integration and optimal performance of the lighting calculation add-in.
- Conducted extensive automated testing and debugging to ensure the reliability and accuracy of lighting calculations, improving the overall user experience.

**Electrical Designer II & BIM Specialist** – [Southern A&E, LLC](#) – Austell, GA

Dec. 2022 - May 2024

**Electrical Designer I & BIM Specialist**

Dec. 2020 - Dec. 2022

**Electrical Engineering Intern**

Aug. 2018 - Dec. 2020

- Utilized Building Information Modeling (BIM) and Computer-Aided Design (CAD) software to document construction requirements, ensuring precision and clarity in all project plans.
- Conducted thorough reviews of shop drawings and product data, verifying adherence to construction specifications and compliance with relevant building codes and standards.
- Performed detailed inspections of electrical installations, including power distribution systems, fire alarm systems, intercom systems, and data network systems, ensuring they met all safety and functionality requirements.
- Developed and implemented custom add-ins for Autodesk Revit using the .NET API, automating repetitive design tasks to enhance efficiency and reduce manual errors.
- Reverse engineered an MS-DOS era binary data format to extract electrical loads as CSV.

**Residential Technology Advisor** – [ResNet Team @ Georgia Tech](#) – Atlanta, GA

May 2016 - May 2019

- Provided comprehensive technical support via phone, live chat, email, and in-person, ensuring prompt and effective resolution of user issues.
- Diagnosed and resolved over 300 data network connection tickets, addressing both physical connectivity and configuration issues across the physical, data link, and network layers of the OSI model.
- Monitored and repaired cable TV and data network equipment serving over 10,000 on-campus residents, ensuring reliable service.

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## PROJECTS

**pyRevitBoost** – [github.com/zachcmathews/pyRevitBoost](https://github.com/zachcmathews/pyRevitBoost)

May 2020 - Present

*Extension to pyRevit, an IronPython environment providing access to the .NET Revit API*

- Created a command that enables progressive filtering based on any parameter assigned to Revit elements.
- Created a command to import and assign electrical loads from a CSV file to Revit circuits.
- Created a command to move multiple circuits from one panel to another, maintaining order when possible.
- Created a command to automatically attach wires based on proximity to electrical connectors.