

Luke Zambella

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GitHub: [LZambella](#)

Education

The College of New Jersey (TCNJ), Ewing, NJ

Bachelor of Science in Computer Engineering

2017 - present

Coursework: *Computer Architecture and Organization, Electronics, Circuits, Linear Algebra, Differential Equations, Statistics, Discrete Mathematics, Control Systems, Software Engineering, Signals and Systems*

Ocean County College, Toms River, NJ

Mathematics

2015 -2017

Skills

Programming: C#/.NET Core, ASP.NET, Java, Python, Ruby, Rails, YAML, HAML, NumPy, SciPy, OpenCV, C/C++,

Verilog, SQL, MATLAB, Simulink, ROS, MVC, Agile, React, Javascript, HTML, CSS, REST, CRUD, API, XML, JSON, Node.js

Software: Visual Studio, IntelliJ, Eclipse, Linux, Git, Vivado, Microsoft Office, Inventor, Eagle, SolidWorks, Docker, Azure, AWS, EC3, Google Cloud

Hardware: Oscilloscope, Soldering, Breadboard, Arduino, FPGA, Robotics, Multimeter, Amplifier design, Circuits

Projects

- **Checkers with Baxter (Python):** Became the first person to document on how to develop for the Baxter robot for the school. Created a checkers game to showcase robot interaction with physical objects to a small seminar.
 - **OpenCV Checkerboard Detection (Python):** Pioneered a brand new library for Baxter that gives it the ability to locate standard checker boards and be able to move to a location given a coordinate.
 - **Custom GrowStuff Module (Ruby):** Incorporated a brand new model for a small online farming community that enables members to quickly view the most popular harvests in a chosen area.
 - **Mercer Street Friends Module (Ruby):** Designed, programmed, and implemented a new feature that allows teachers to send student reports, and communicate with parents electronically.
 - **Music Player (C#):** Developed user-interactive music software for a small community integrated with a VoIP and instant messaging service.
 - **Mechanical Computer Keyboard (C):** Reinforced circuits and firmware development knowledge by engineering a PnP keyboard from scratch with an Arduino microcontroller interface.
 - **ARM CPU (Verilog):** Attained hands-on experience with the workings of a computer processor by developing an ARM-based RISC.
 - **Rotary Inverted Pendulum (MATLAB):** Researched and implemented inverted pendulum balance control and communicated findings to a small audience.
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Involvement

TCNJ Robotics Club

Fall 2017 - Present

- Worked with a small group to successfully build an Arduino powered robot that solves mazes for a school competition.
 - Designed brand new 3D printed parts that club members could incorporate into their own designs
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Employment

Photographer, TCNJ Center for the arts, Ewing NJ

Fall 2018

- Responsible for capturing moments at numerous important faculty and guest speaker seminars
- Used Photoshop to ensure photos were color-accurate and edited for use with advertisements that were seen by thousands of people