

Luke Zambella

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Employment

Systems Engineer, *Verizon Communications*

June 2021 - Present

- Support production software releases for customer-facing chat AI services.
- Work with stakeholders to implement new features and improvements for services.
- Upgraded backend architecture to improve natural language understanding.

Network Engineering Internship, *Verizon Communications*

June 2020 - August 2020

- Managed a 4 member team and ensured that all had adequate knowledge on the architecture and technologies of each project design.
- Reduced microservice cloud hosting costs by 70% by migrating a service that stores important customer service information to a database from an AWS EC2 server to AWS Lambda.
- Streamlined the Dialog Flow agent release cycle by developing a Jenkins job with Python scripts that allow a user to archive an agent to source control with options to tokenize any parameter via a configuration file.
- Developed a sister Jenkins job to restore the agent from source control with proper parameters to different development environments.
- Began development on an internal web app with React that aids users without access to Dialog Flow with testing and editing agents. Ensured code was documented for any future teams.

Education

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

Bachelor of Science (B.S.) in Computer Engineering

Coursework: *Computer Architecture and Organization, Electronics, Control Systems, Software Engineering, Artificial Intelligence (AI), Natural Language Processing (NLP), Digital Signal Processing (DSP)*

Projects

- **Checkers playing robot (Python):** Developed a checkers game utilizing computer vision to showcase robot interaction with physical objects. The robot parses a video feed in real time to locate the game board and subdivide the playing squares. A checkers engine was modified to send movement commands to the robot and users could interact with the game.
- **Authorship Attribution System (Python):** Worked with a group of 3 to design a machine learning algorithm with MLE and singleton unigram methods to train a large set of IMDB users and their reviews in order to attribute an unknown review to any of the users.
- **Arcade Game AI (Python):** Worked with 3 students to create an AI that can successfully complete a platforming style arcade game using the A* tree search algorithm and some planning.
- **ARM CPU (Verilog):** Implemented an ARM-based RISC using a 5-stage pipeline with data hazard detection, and forwarding. Used a custom assembler to create a test program to verify the design.
- **ARM Cache (Verilog):** Designed a 16-way 16-set associative cache with a FIFO replacement policy. Compared the miss rate to a C++ simulation to verify that the design operated correctly.
- **Rotary Inverted Pendulum (MATLAB):** Used control theory and PID feedback to design and operate a self-balancing pendulum rod with automatic swing-up.

Skills

Programming Languages: Python, Javascript, Java, C#, C/C++, Verilog, MATLAB

Frameworks: .NET Core, ASP.NET, React.js, Bootstrap, Qt

Software: AWS EC2, AWS Lambda, AWS SQS, Google Dialog Flow, Jenkins, Linux, Git