

# Luke Zambella

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## Employment

### **Systems Developer II, Verizon Communications**

June 2021 - Present

- Decommissioned old chat AI gateway microservice and migrated/improved critical code to a new microservice using Spring Boot.
- Helped implement 10 legacy API endpoints to a modern Java library.
- Migrate customer service agent chat AI flows from V2 architecture to V3 architecture using DialogFlow.
- Developed REST API endpoints that allows the chat AI to interact with customer information backend.
- 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.

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## 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)*

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## 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, caching, and forwarding. Used a custom assembler to create a test program to verify the design.

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## 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