

TONY AIELLO

Software Developer

805-760-6870 | Los Angeles, CA

heytonyyy3@gmail.com

[Portfolio](#) | [LinkedIn](#) | [GitHub](#)

TECHNICAL SKILLS

Languages: HTML, CSS, Python, Javascript/Typescript, Java, Unix

Frameworks/Libraries: ReactJS, NextJS, NodeJS, Tailwind, Material UI, Bootstrap, Halfmoon, Flask, Jinja2, Spring Java, Hibernate, PyTorch

Databases: MySQL, MongoDB

Tools: AWS(EC2), MySQL workbench, Git, Github, Postman, Spring Tools Suite, Docker, Vercel, Heroku

PROFESSIONAL EXPERIENCE

AP Computer Science & Math Teacher | Los Angeles Unified School District

Los Angeles, CA | 2016 - 2022

- Planned and delivered the computer science and mathematics curriculum to 1000 students over 6 years, emphasized collaborative learning, cultural relevance teaching, and access to learn computer science in underserved communities. In 2019 and 2020, my classes received the AP Computer Science Female Diversity Award.
- Lead Senior Advisory Teacher Team on lesson planning, school-wide events, fundraisers, and field trips for the senior class.

Library Technician | Ventura Unified School District

Ventura, CA | 2013-2016

- Designed HTML/CSS pages on Adobe Dreamweaver and used FTP software to send pages to the district server hosting the school's website

SOFTWARE PROJECTS

KantoNET | [GitHub](#) | [Google Colab](#)

TechStack: Google Colab, JupyterNotebook, Python, PyTorch, Kaggle

*Image classification **machine learning** model that can classify one of the original 151 pokemon. The model was implemented using the convolutional neural network VGG16 architecture on a dataset of 22,000 pokemon images.*

- Conducted a **data investigation** of the 22,000 images to determine appropriate preprocessing strategies such as removing bad file types, adjusting oversampling of some pokemon, and creating training / testing image sets.
- Implemented various **data augmentation** methods such as random orientations/color variations to the training data to increase the models base test accuracy from 41% to 63%.
- Improved accuracy from 63% to 87% by implementing **transferred learning** of the VGG16 pretrained model instead of instantiating with random weights.

Sudoku Solver | [GitHub](#) | [Live Site](#)

TechStack: Python Flask, MongoDB, PyTesseract, React.js, Heroku

Flask RESTful API that accepts a post request of a sudoku board image file, and responds with a 2d array solution of the sudoku board with each number marked as 'predicted' or 'empty' based on the server's image analysis.

- Developed an image service with **PyTesseract** to determine the sudoku grid from the image, convert to a 2x2 array of predicted cells and empty cells, and used a depth first search algorithm to solve the sudoku grid.
- Using **Bootstrap** and **React**, designed a simple front end with responsive components, error pages, loading pages, and a Bug Report form on the solutions page to generate data that can be analyzed later.
- Implemented a Bug Report collection in **MongoDB** to save the incorrect cells reported from the frontend and a path to the location of the image uploaded from the form.
- Deployed on **Heroku** and connected to GitHub to create a pipeline of tested development code to production.

SET | [GitHub](#) | [AWS Site](#) | [Heroku Site](#)

TechStack: MongoDB, Express, React, Typescript, AWS, Heroku

A time limited web-based card game: users have 10 mins and 81 cards to make "sets" of 3 based on properties of the card.

- Created a global game state using the **React** useContext and useReducer hooks to encapsulate and control game variables and function.
- Enhanced speed by eliminating need for image data by customizing code for **svg** tags to be drawn dynamically based on the fetched data from the server API's response.
- Deployed web app to **AWS EC2** and **Heroku** with a **MongoDB** database to create a persistent leaderboard where players can add their initials if their score makes it to the top 8.

EDUCATION

Coding Dojo | Full-Stack Developer Certificate

Los Angeles, CA (2022)

- 16 weeks intensive coding bootcamp: 1000+ hrs of full stack web development, algorithms, peer programming

University of California - Santa Barbara | Bachelors in Mathematics

Santa Barbara, CA (2009 - 2013)