KEN GU

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EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES
Expected June 2020

- Candidate for Bachelor of Science, Computer Science and Engineering (GPA 3.9)

COURSEWORK INCLUDES:

- Object Oriented Programming (C++), Data Structures and Algorithms
- Intro to Computer Science and Web Programming by Harvard University (edX)
- Intro to Electrical Engineering

TECHNICAL SKILLS

LANGUAGES

- C/C++, Python, HTML/CSS

TOOLS

- Bootstrap, Git, Flask, Jinja2, Arduino

ENGINEERING PROJECTS

STOCK-TRADING WEB APP
December 2016 - January 2017

- Utilized Flask Python Micro-framework and SQLite for backend server and database handling.
- Maintained users' username, password, cash, shares owned etc. using SQLite.
- Integrated Jinja2 Template Engine and Bootstrap for intuitive/ simplistic design.

SPELL CHECKER COMMAND LINE PROGRAM
December 2016

- Implemented a trie data structure in C storing a dictionary of words from disk into dynamically allocated memory which then spell-checks a given file by searching through the trie and outputs to the user the misspelled words
- Made a conscious design decision to use a trie data structure for its efficient $O(1)$ runtime while considering the cost of complex insertion
- Resulted in a slower overall running time for medium word count text files but a faster running time for larger text files as the main running time cost was storing the dictionary into memory.

AUTONOMOUS LINE-FOLLOWING CAR
February 2017- Present

- Using the Arduino IDE, implemented PID control feedback for steering control as well as line-detection using a edge detection method for better performance in different lighting environments
- Utilized a half-bridge to allow braking for optimal turns

TRAVEL OPTIMIZATION WEB APP
April 2017

- Implemented an algorithm that builds an itinerary from user inputted parameters using attraction information requested from Yelp's API and location/ travel time information from Bing Maps' API,
- Employed Flask for the server and Bootstrap for the front end
- Top 30 out of 160 submissions at LA Hacks 2017

ACTIVITIES

IEEE OPEN PROJECT SPACE, UCLA
September 2016 - June 2017

- Studied and applied skills of breadboarding, soldering and programming micro-controllers in monthly projects.

AWARDS

SECOND PLACE HACK ON THE HILL, UCLA
February 2017

- Created a school event planner website that allows users to input a time, location, and description for an event and see other such entries sorted by time and location
- Utilized Angular.js and Bootstrap for the front end, sqlite3 for the database, Node.js and Express.js for the server, and Google Maps API for displaying map information