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 3.94 , Dean's Honor List)

COURSEWORK INCLUDES:

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

TECHNICAL SKILLS

LANGUAGES

- C/C++, Python, HTML/CSS, Bash, MATLAB/Octave

TOOLS

- Bootstrap, Git, Flask, Jinja2, Arduino, Linux

ENGINEERING PROJECTS

LINUX FROM SCRATCH

August 2017

- Built a running Linux system following the Linux from scratch guide
- Learned to mount filesystems, download and compile packages, configure the kernel, bash scripting
- Gained a holistic understanding of the essential parts of a working Linux system

IMAGE COMPRESSOR

August 2017

- Applied K-means clustering to find a smaller set of colors that is most representative of the image based on each pixel's RGB values
- Utilized vectorization with Octave for faster performance

TRAVEL OPTIMIZATION WEB APP

April 2017

- Implemented a simple 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

AUTONOMOUS LINE-FOLLOWING CAR

February 2017- June 2017

- 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

SPELL CHECKER COMMAND LINE PROGRAM

December 2016 - January 2017

- 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

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 web app 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