

RICHARD KO

Address

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SKILLS

- Proficient in JAVA programming language; O.O.P. 4 pillars(inheritance, polymorphism, abstraction, encapsulation), JavaFX GUI creation and Java API Utilization.
- Proficient in fundamental data structure design and implementation.
- Computer science courses taken in *Computer Architecture, Networks, Algorithms, Operating Systems, and Databases*.
- Software engineering courses taken in *Project Management, Software Design, and Requirements Specification*.
- Experience with web development stack(HTML, CSS and Javascript), libraries(React) and frameworks(Angular).
- Strong written and oral communication skills (fluent in English and Korean).

EXTRACURRICULAR EXPERIENCE

Computer Science Club

Santa Monica, CA

Algorithmic Study Coordinator

2020-2021

- Coordinated programming exercise assignments to individual cohorts and moderated for completion.
- Conferred with professors regarding optimal data structure/algorithm design.
 - o Big O analysis for faster and more efficient sorting algorithms (i.e. bubble sort vs. merge sort, etc).
 - o Learning in-place strategies for problem solving (e.g. two-pointer system for array iterations).

Barnabas Robotics

Pasadena, CA

Software Development Intern

2021

- Assisted in a complete overhaul of Google's open source Blockly web-based programming teaching tool for optimization and feature addition.
 - o Created new generator files(.js) and edited code to seamlessly translate Javascript code to C code for use with the Blockly GUI.
 - o Added new "blocks" with functionality requiring knowledge of HTML, CSS and JSON data retrieval.
 - o Created custom generators to allow for string(stationary and scrolling) and image(gif to hex) printing on a small 128x64px LCD screen.
- Developed a greater understanding and received proper instruction on the importance of git and git organization.
- Learned to work in a team environment where natural strengths, technical skills and characters needed to be evaluated and balanced for a harmonious cohesion to project completion.

PERSONAL PROJECTS

E-Commerce Website

- Created an e-commerce website using java servlets.
- Developed a website database management(CRUD - Create, Read, Update and Delete).
- Employed session tracking to save information vital to customer cart information.
- Technologies: Java, React, Express, NodeJS and MySQL.

Tile Matching Game Environment(Custom Game Engine)

- Incorporated popular industry level design patterns: factory and facade.
- Applied knowledge of DFS(Depth First Search) algorithms for tile matching across a two dimensional array.
- Utilized python libraries to support in game features; menu, transitions, graphics, sprites.
- Technologies: Python, PyGame(Library).

Custom LTI(Learning Tool Interoperability) 1.3 for Canvas LMS(Learning Management System)

- Configured an outdated build of Instructure's Canvas by updating dependencies and hosting on virtual machine.
- Leveraged an OATH2 two-way handshake between Instructure's Canvas and server code for token retrieval.
- Designed a static build of a front-end React application into server-side code to avoid CORS complications.
- Completed API calls between front and back ends along with Canvas' server hosted locally.
- Technologies: React, NodeJS, Express, Docker.

EDUCATION

SANTA MONICA COLLEGE

Santa Monica, CA

Computer Science Focus

2019 – 2021

- Dean's List (3.96 gpa)
- Completed courses in Java, C++ and data structures.

UNIVERSITY OF CALIFORNIA, IRVINE

Irvine, CA

Bachelor of Science, Software Engineering

2021 – Present

- Dean's List (*anticipated*: 3.70 UC gpa)