RUDWICK, Thomas

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Professional Summary: Georgia-Tech trained, college-level Computer Science teacher transitioning into a Software Engineering role.

TECHNICAL SKILLS

Languages: Java, Python (NumPy, OpenCV), JavaScript, C++ , HTML, CSS, Node.js, SQL, Matlab
Soft Skills: Communication (developed over years of teaching), setting and meeting requirements, long-term planning, collaboration

PROJECTS

- Enhanced Road Sign Detection
    - OpenCV and NumPy based app from scratch that identified road signs in videos, achieving 79% accuracy on identifying and matching specific signs for usage in a self-driving car.
    - Implemented ViolaJones algorithm to detect shapes to improve runtime. Trained my data on thousands of pre-tagged signs.
- Content-Aware Seam Carving
    - OpenCV and NumPy based app to allow a user to resize an image, preserving the fidelity of the original without adding artifacts.
    - Added speed enhancements such as NumPy strides to improve performance.
- Numble Solver - Built a web-based solver for the online game Numble. Brute forcing the possible solutions, providing hints and solutions.
- Internal Autograder - created a grader for students in APCS and Data Structures.
    - Built a web-based portal for Java-based submissions.
    - Built a Python-based text interface to run autograders with various inputs, analyzing correctness and dates of files for lateness.
    - Wrote easily adaptable unit tests for assignments. Provided feedback on submissions without giving solutions.

EDUCATION

Georgia Tech University (2021 - May 2023) 3.6 GPA - Master's in Computer Science

- Selected Coursework: Artificial Intelligence, Computer Vision, Graduate Algorithms, Computational Photography

George Mason University (2014 - 2016) 3.98 GPA - Master's of Education: Secondary Mathematics
University of Illinois - UIUC (2007 - 2011) 3.52 CS GPA- Bachelor's of Science: Computer Science. Mathematics Minor

SOFTWARE ENGINEERING EXPERIENCE

Epic Systems (2011- 2013) **Verona, Wisconsin, USA**
Software Engineer

- Developed surveillance functionality for Infection Control Module which was used by hundreds of infection preventionists to track patients
- Worked with Healthcare Professionals to develop an end user facing workflow for reporting on superbugs
- Solved reporting problems for the Operating Room Team to support the upgrade to Web (HTML/CSS/JS)

TEACHING EXPERIENCE

Arlington County Public Schools (2022 - Present) - ***Computer Science Teacher*** **Arlington, VA, USA**

- Taught college-level Data Structures, Algorithms and Web Development; Java and Javascript
- Ran and taught the competitive coding club lessons, including self-developed LeetCode and HackerRank style questions.

Chatsworth International School (2020-2021) - ***Secondary Mathematics Teacher*** **Singapore**

Singapore American School (2017 - 2020) - ***Computer Science Teacher*** **Singapore**

- Taught college-level Java-based Data Structures: Algorithms, Sets, Maps, Graphs, Linked Lists, Trees, Heaps, Stacks, Queues
- Created the entire curriculum for four different courses (Data Structures, APCS, Mobile Apps, Digital Game Development)
- Developed the physics coding curriculum to model problems visually in Python.
- Overhauled the AP Computer Science curriculum, resulting in 65% of Students scoring a 5 on the AP exam (4.5 average)

Fairfax County Public Schools (2013 - 2017) - ***Computer Science Teacher*** **Fairfax, VA, USA**
Thomas Jefferson High School for Science and Technology and Fairfax High School

- Taught Web Development, Data Structures, and AP Computer Science. Developed the entire Web Development Curriculum
- Tripled the enrollment in Web Development (from 40 to 120) by providing a hands on, real world curriculum and high quality instruction
- Created and implemented an online Java autograder, which reduced the man hours of five teachers by 50 hours per school-year. Improved grade accuracy and feedback for students, and provided plagiarism detection. Worked with a team to identify requirements and fix bugs.