RUDWICK, Thomas

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

TECHNICAL SKILLS

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

PROJECTS

- Enhanced Road Sign Detection (Python, OpenCV, NumPy)
  - Identified road signs in videos, achieving 79% accuracy matching specific signs for usage in a self-driving car.
  - Implemented ViolaJones algorithm to detect shapes to improve runtime by 61%.
- Content-Aware Seam Carving (Python, OpenCV, NumPy)
  - Allowed users to resize an image, preserving the fidelity of the original without adding artifacts.
  - Added speed enhancements such as NumPy strides to improve performance by 84% over initial performance.
- Numble Solver (Javascript)
  - Web-based solver for Numble. Brute forces thousands of possible solutions, providing hints and solutions.
- Internal Autograder (Javascript, python, Java)
  - Web-based portal for Java-based submissions for student submissions with unit tests for 25 assignments.
  - Python-based text interface to run autograders analyzing correctness and dates of files for lateness, and calculated grades.
  - Provides feedback on given inputs and produces feedback on other cases without giving solutions for 270 users.

EDUCATION

Georgia Tech University (2021-2023) 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 over 120 Healthcare Professionals to design an end user facing workflow for reporting on superbugs
- Automated code to solve thousands of 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**

- College-level Data Structures, Algorithms and Web Development; Java and Javascript at three levels to 100 students
- Coached the competitive coding club lessons, including hundreds of web-supplied and self-produced LeetCode style questions.

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

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

- College-level Data Structures to 130 students: Algorithms, Sets, Maps, Graphs, Linked Lists, Trees, Heaps, Stacks, Queues (Java)
- Created the entire curriculum for four different courses (Data Structures, APCS, Mobile Apps, Digital Game Development)
- Developed a physics coding curriculum to model problems visually in Python for a curriculum given to 150 students each year
- Overhauled the AP Computer Science curriculum, resulting in 65% of students scoring a top AP exam score

Fairfax County Public Schools (2013-2017) - *Computer Science Teacher* **Fairfax, VA, USA**

Thomas Jefferson High School for Science and Technology and Fairfax High School

- Courses: Web Development, Data Structures, and AP Computer Science. Modernized the entire Web Curriculum
- Increased enrollment by 200% in Web Development (40 to 120) by providing a real world curriculum and project based learning
- 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.