

Summary

A self-taught, highly motivated programmer seeking to launch a career as a **junior level front-end developer**. A quick learner and an astute problem solver enthused to implement technology in businesses to improve efficiency, customer satisfaction, and insight. Excellent communication and interpersonal skills. Background in math, programming, and teaching. Based in greater Seattle region.

Language & Skills

HTML5 / CSS 3 / SASS / JavaScript (ES 2017) / jQuery / jQuery UI / Java / PHP / MySQL / Node / Vue.JS / AJAX (XHR) / OOP / FP

Experience

STEPS EDUCATION, SEOUL, KOREA *FOUNDER / FULL STACK DEVELOPER / TUTOR*

June 2015 – December 2017

Created from ground up an education platform that aided teaching math to students in Korea. Greatly reduced lesson prep time **from >15hours/week to <30 min/week** and significantly improved revenue and profit. As part of the role, I have developed :

- ✓ **PRECISION.JS LIBRARY** Designed to overcome the shortcomings of native **JavaScript** math by storing numbers in arrays, and operating arithmetic with/on them, in order to preserve precision. Backbone of the platform's math operations.
 - Perform frequently used math functions, such as greatest common factors, prime factorization, etc.
 - Parse and solve arithmetic operations of repeating decimal numbers and fractions.
 - Calculate factorial, combination, and permutation with precision far beyond practical needs.
 - Understands and operates with repeating decimals (e.g. $0.2\bar{3} - \frac{1}{3} = -0.1$).
- ✓ **INTERACTIVE APPS** Visually and interactively presented various math concepts, such as fraction and time arithmetic, solving single variable equations, and decimal numbers. Improved student engagement, interest, and understanding of the topics.
- ✓ **PROBLEM GENERATOR / PERFORMANCE TRACKER** Generated practically an infinite number of problems for various math topics. Problem difficulty adjustable at granular levels to aid students' mastery of topic.
 - Used **PrecisionJS** to ensure randomly generated fractions, decimals, and big integers calculated to the correct answer.
 - Used **PHP** and **MySQL** via **AJAX (XHR)** calls to check users' input, record performance, and to tabulate, graph, track, and analyze students' performance over time for specific topics.
- ✓ **SMS TEXT NOTIFICATION** Used **third party API (NEXMO)** and **PHP** to automatically send text messages (SMS) to parents about missing assignments or change in performance. Greatly improved clients' confidence.
- ✓ **BRAND** Distinguished myself among target market as a private tutor who used technology to teach. Hourly wage **increased 140% (~\$45 → ~\$63)** and revenue **increased over 250% (~\$2.4k → ~\$6k)** compared to before using the platform.

Portfolio

Additional selection of work hosted on my [GitHub](#) and [website](#)

- ✓ **KenKen Solver** App that solves KenKen, a puzzle akin to sudoku, but with arithmetic.
- ✓ **Algebra Basics** App that lets users solve single-variable algebra problems by dragging/dropping tiled numbers and variables.
- ✓ **Knight's Tour** App that solves and visualizes the Knight's Tour problem on an 8 x 8 board from any given position.

Miscellaneous

University of Washington, Seattle Mathematics B.S. 2005.06 – 2011.09 (discontinued)

Private Math Tutor Taught math as part and full-time job since 2009. Excellent in explaining and simplifying complex topics

Webmaster, Korean Student Association Updated, maintained, and modernized the club website during college (volunteer)