Joshua Gagnier

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EDUCATION

Professional Scrum Master I (PSMI), Scrum.org — January 2024
Computer Science Specialization, University of California, Riverside — October 2023
Master of Science in Science Education, California State University, Long Beach — July 2022
Bachelor of Science in Chemistry, University of California, Irvine — June 2014
Associate in Physics, Cerritos College, Norwalk — June 2012
Associates in Chemistry, Cerritos College, Norwalk — June 2012

WORK EXPERIENCE

Santa Ana High School
AP Computer Science Teacher / AP Physics — July 2018-Present

· Teach a Project Based Computer Science course with integrated coding(C++, Python, HTML, CSS, JS) , 3D modeling, printing, robotics/embedded programming (Arduino IDE), and data science (Pandas, Numpy, Matplotlib on Kaggle)
· Led students to successfully compete and place in the OC Science & Engineering Fair and OC Maker Challenge since 2019 using Arduino (C++), MIT App Inventor (Scratch), IoT integration, and Python applications
· Built partnerships with UCI for STEM enrichment and student research opportunities, Girls Who Code for student coding internships, and JPL for Physics curriculum and competitions, and CalTech for Python data analysis
· Provide professional development for technology integration (Arduino, Raspberry Pi, Canvas, Google Classroom, and various applications), and science standards implementation

California Institute of Technology
Computer Science & Electrochemistry Research Mentor Teacher — Summers of 2021, 2022, and 2023

· Mentored students in presentation skills, programming languages (Python), data science-specific libraries (Astropy, Matplotlib, Numpy, and Pandas), mathematics (linear algebra), journal review, physics, astronomy, and chemistry
· Collaborated with Astrophysics, Astronomy, and Electrochemistry professors, graduate students, and post-doctoral students to curate and deliver accessible and impactful student-driven research experiences for high school students from high need communities
· Created programs and curricula to build students' competencies to effectively contribute to college-level research
· Mentored students in presentation skills, programming languages, mathematics, journal review, physics, astronomy, and chemistry

Orange County Department of Education (CTE)
Curriculum Specialist (contract) — June 2020-August 2021
Maker Education Certificate Program Instructor (contract) — June 2019-July 2021

· Developed & Led County Professional Development workshops for: Arduino, Circuitry, Coding, Additive Manufacturing and App Development
· Collaborated with Sonoma State University, Sonoma County of Education, and OCDE CTE & Maker leadership for program development and virtual course creation

California State University, Long Beach
Science Education Research Assistant (contract) — August 2019-November 2019

· Analyzed data on the effectiveness of a school district's 1-week introductory science professional development program
· Consolidate, code, and created a detailed report on feedback, perceptions, and learning outcomes for the training

SAUSD STEAM Summer Enrichment
Lead Teacher & Grant Writer — Summers of 2016, 2017, 2018, and 2019

· Wrote competitive annual applications and obtained grants to fund STEAM summer programs
· Planned and coordinated activities, field trips, and directed a small teacher cohort
· Taught students how to design 3D models, 3D print, and develop Arduino projects to utilize that knowledge to solve local environmental and social issues through engineering

Chemistry Teacher, Santa Ana High School July 2017-June 2018
7th and 8th Grade Science Teacher, Raymond A Villa Fundamental Intermediate July 2015-June 2017
Chemistry Teacher, Locke Academy B July 2014-June 2015

PROJECTS

Web Application Development March 2024 - Present

· Developed several web applications in React, Typescript, Next.js, Node.js, Tailwind, and SQLite
· Successfully integrated Openai LLM, Google Authentication, Plausible Analytics, Stripe payment services, Sendgrid (email authentication/sending), SEO tags, HTML accessibility guidelines, Prisma ORM (database UI/editor), and more.

Various Arduino/ESP Projects + App Development February 2018- Present

· Guided hundreds of Arduino (C++) based projects which utilize IoT (Alexa), bluetooth, wifi, mesh, app development (authorization, database, arduino control, bluetooth, ai integration, etc.), RFID, sensors, leds, LCDs, relays, motors, pumps, servos, and dozens of additional sensors and tools to achieve a variety of tasks.

C++ Interactive Applications February 2024

· Developed using Interbase's C++ builder an event tracking application utilizing InterBase SQL database server
· Created interactive applications utilizing textures, physics, logic,class-based layered objects in C++ using Raylib

Go REST API January 2024

· Wrote a RESTful API for a crud application in Go, tested in Postman (GET, POST, PATCH, DELETE, and PUT)

GPT 3.5-Turbo Query Bot December 2023

· This python program generates answers using the OpenAI API utilizing data sets that it was trained with the goal of supporting customer service representatives with product return scenarios
· Preprocessed data (cleaning, tokenization, and chunking), generated embeddings and integrated deprecated libraries functions

Python Organization Script December 2023

· The script organizes files in a target folder by their file extensions, creating separate folders for each unique extension and moving the corresponding files into their respective folders.
· It demonstrates proficiency in file manipulation, directory traversal, and working with sets and dictionaries in Python.

Galactic Redshift Analysis October 2023 - November 2023

· Analyzing astronomical data related to redshift measurements, using FITS files through data manipulation, visualization, and coordinate transformation using NumPy, pandas, matplotlib, and Astropy
· Leveraged deep learning techniques to build and optimize predictive models, resulting in improved accuracy and efficiency. Utilized TensorFlow and Keras for model development, training, and validation

LEADERSHIP

Mentor/Master Teacher July 2018-Present

· Mentored nine UCI student teachers in the UCI's credential programs successfully to become Physics teachers
· Develop leadership, science standard competency, technology, and social justice aptitude in former student teachers and mentees who are serving as advocates and exemplars within their districts for NGSS and cross-curricular integration
· Regularly update and train myself on newest teaching strategies, frameworks, and educational trends
· Mentored several pre-service teachers from UCI and CSULB

Orange County Department of Education (STEM)
Lead High School Lead STEM Practitioner September 2019-June 2020

· Identified as the Lead teacher for other lead High School teachers identified selectively by Orange County districts
· Support facilitation of the meetings for high school STEM leaders across Orange County

Orange County Department of Education (STEM)
Lead STEM Practitioner September 2017-June 2018

· Represented SAUSD as a STEM teacher leader
· Developed and reviewed action plans for K-12 district STEM needs
· Provided professional development for SAUSD in collaboration with OCDE and other OC Districts