Kunal Marwaha

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Looking for part-time, unpaid research project in mathematical or computational physics.
Professional software engineer.
I learn quickly.

EXPERIENCE

Senior Software Engineer | Pandora Media | Oakland, CA | Feb 2018 - present
- Built tools to import, deduplicate, and measure new music delivered to Pandora (Java, SQL)
- Involved with matrix-factorization-based approaches to cluster content by attribution

Forward Deployed Engineer | Palantir Technologies | Washington, DC | August 2016 - Jan 2018
- Built data entry and data analysis tools (React, TypeScript, Redux)
- Various clients in the US Government space

Research Assistant | Birgitta Whaley (UC Berkeley) | Berkeley, CA | Jan-Aug 2015, Jan-May 2016
- Independent project: bilinear control theory applied to nonlinear spectroscopy (paper)
- Independent project: compressive sensing applied to quantum information (paper)

Teaching Assistant | UC Berkeley EECS | Berkeley, CA | Summer 2015
- Taught a popular, daily class for "Discrete Mathematics and Probability Theory" (CS70)
- Wrote discussion worksheets, homeworks, and additional logic problems

SKILLS

Programming: JavaScript/React/TypeScript, Python/Django, Java/Spring, SQL, Scheme, LabView
Simulations: Jupyter notebooks, SolidWorks/AutoCAD, Multisim/HSPICE, Mathematica
Electrical Lab: Oscilloscope, Multimeter, Function Generator, Parameter Analyzer
Building: Power tools (saws, drills), Soldering (solder & wick, reflow oven, SMT & PTH), 3D Printing
Chemical Lab: Gas Chromatography, Atomic Spectroscopy (AAS, MP-AES), Rotovap, Titration
Business: Grant writing, Engineering project management, Nonprofit 501(c)(3) Incorporation

EDUCATION

Bachelors of Science in Engineering Physics (May 2016)
Bachelors of Science in Electrical Engineering & Computer Science (May 2016)
University of California - Berkeley (GPA: 3.73)

Math: Probability, Linear/Abstract Algebra, Real/Complex Analysis, Vector Calculus, PDEs
Physics: Mechanics (Statistical, Quantum, Classical, Continuum), Thermodynamics, E&M, MHD
Electrical Engineering: Microelectronic Devices, Circuits, Signal Theory, Feedback Control
Computer Science: SICP, Data Structures, Computer Architecture, Algorithms, AI, Data Science

SEMINAR TALKS AT UC BERKELEY

Kunal Marwaha, "Applications of Bilinear Control Theory in Nonlinear Spectroscopy"
Numerical Methods in Radiation Transport: Final Project — May 10, 2016 (slides)
Whaley Research Group — May 27, 2015 updated May 18, 2016

Kunal Marwaha, "Quantum Applications of an Efficient Solution to Compressive Phase Retrieval"
Society of Physics Students Undergraduate Talk — February 17, 2015 (slides)
Whaley Research Group — January 28, 2015

AFFILIATIONS

President, Society of Engineering Sciences (departmental club) — 2014 and 2016
Instructor, Software Carpentry (non-profit for introductory programming) — 2015-present
Carillonist, UC Berkeley Carillon (bell tower musical instrument) — 2012-present
Eagle Scout, Boy Scouts of America — 2011

References available upon request.