Ka Wai (Karry) Wong • +1 (530) 574 3799 • ucdwong@ucdavis.edu
• www.linkedin.com/in/karry-wong/ • https://github.com/karrywong
Strong software engineer using 6+ years in science and engineering to deliver impactful engineering, data, and ML solutions. Computational math PhD, avid and competitive coder, and multilingual professional in software engineering and data science.

Professional Experience:

Oct 2021 - now
Postdoctoral researcher, Lawrence Livermore National Laboratory, California

- Achieved first-ever 3D electron temperature measurement of burning plasmas via x-ray emission tomography and 3D geometry modeling of nuclear fusion hotspot by developing noise-robust 3D reconstruction algorithms (MATLAB). The temperature measurement results can enable and enhance data-driven and machine learning analysis such as Bayesian inference and Markov-Chain Monte-Carlo method on experimental data by using python library emcee and open-source dataset
- (Dec 2019 - Jun 2021 as Graduate Student Researcher) 2x higher accuracy in x-ray emission measurement of nuclear fusion experiments by developing image denoising algorithms via algebraic reconstruction techniques to analyze 100+ 2D x-ray images, featured in a 3-min SLAM video

Jun. - Sept. 2021
Software Engineer Intern, Autodesk, San Francisco, California.

- Successfully computed volume enclosed by solid mechanical bodies filled with lattices/gyroids structures for 3D printing by inventing and designing a stochastic sampling algorithm (C++), proving algorithm's correctness using statistics and probability theory, and then coding up the algorithm using multi-threading. I benchmarked my algorithm with the conventional finite element methods and
- my algorithm demonstrated 2x higher accuracy in the case of largely varying lattices/gyroids density
- Enhanced user experience in CAD tool Fusion360 by integrating my volume estimation algorithm into the additive manufacturing feature, which informs user of amount of printing materials needed
- Solved various 3D computational geometry problems involving intersection, unions, and differences of solid bodies defined by implicit modeling, B-rep, and NURBS

Jul. - Sept. 2019
Software Engineer Intern, Rohde & Schwarz USA, Beaverton, Oregon.

- Successfully fixed 10+ critical bugs in object-oriented programming codebase (Python/C++, 3000+ lines) by implementing automated unit tests in WiFi technology (various WLAN 802.11 standards)
- (Apr-Sept 2016 as full-time software testing engineer in Munich headquarters) Designed and developed automated unit test cases for Wideband Callbox on 4G LTE

Summers 2017/18/19
Graduate Student Researcher, Center for Educational Effectiveness, University of California, Davis

- Helped students from underrepresented minority groups and with social disadvantages achieve academic success by building up and analyzing large dataset (20k rows in Excel) containing 10+ different performance metrics of 5,000+ students in remedial learning using software ALEKS
- Helped more than 1200+ college students master calculus and advanced math topics in 15+ different courses over 5+ years by being an excellent communicator and a great educator, selected as an Outstanding Graduate Student Teaching Award recipient out of 2000+ teaching assistants

Programming Languages

Python (advanced), C++ (advanced), MATLAB (expert), R, and Fortran
Machine Learning (TensorFlow & PyTorch)
Fluent – English, German, Mandarin; Native – Cantonese; Conversational – Hebrew

Education

Ph.D. Applied Math (Sept 2021, GPA 3.9) University of California, Davis
MSc Math (2015) TUM in Germany; BSc Math (2011) HKUST in Hong Kong