Ka Wai (Karry) Wong, Ph.D.

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• LinkedIn • Google Scholar • GitHub

Professional Profile

Versatile and collaborative software engineer utilizing 3 years in tech and research to deliver impactful algorithm and data structure solutions in 3D geometry and computer vision. Applied math PhD, avid coder, and multilingual professional in software engineering.

Core Proficiencies

Programming Languages: Python, C++, MATLAB
Languages: English, German, Mandarin (fluent), Cantonese (native), and Hebrew (conversational)

Professional Experience

Meta Reality Labs • Burlingame, CA
Visiting Researcher Jun. 2022 – Present

- Developed computer vision algorithms, focused on large-scale 3D reconstruction and mapping, accurate user's relocalization, and structure from motion, to support functionality and enhance performance of devices for Virtual Reality and Augmented Reality such as Oculus Quest and Ray-Ban Stories
- Conducted experiment to identify false positives, i.e. two maps of different physical spaces are merged when they are not supposed to, in map alignment and developed rejection mechanism
- Built benchmarking system to profile different components of an on-cloud map merging pipeline

Lawrence Livermore National Laboratory • Livermore, CA
Postdoctoral Researcher Oct. 2021 – Jun. 2022

- Achieved first-ever 3D temperature measurement of nuclear fusion hotspot via computed tomography and 3D geometry modeling by developing noise-robust 3D reconstruction algorithms (MATLAB) to enable data-driven and machine learning analysis (Bayesian inference, Markov-Chain Monte-Carlo) on experimental data using python libraries emcee and large simulation dataset

Graduate Student Researcher Dec. 2019 – Jun. 2021

- Earned 2x higher accuracy in x-ray emission measurement of nuclear fusion experiments by developing image denoising algorithms to analyze 100+ 2D x-ray images, featured in a 3-min SLAM video

Autodesk • San Francisco, CA
Software Engineer Intern Jun. 2021 – Sept. 2021

- Developed stochastic algorithm to compute volume enclosed by lattice structures for 3D printing
- Solved various 3D computational geometry problems involving implicit modeling, B-rep, and NURBS

Rohde & Schwarz USA • Beaverton, OR
Software Engineer Intern Jul. 2019 – Sept. 2019

- 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)

Software Testing Engineer (Munich, Germany) Apr. 2016 – Sept. 2016

- Designed and developed automated unit test cases for Wideband Callbox on 4G LTE

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

- Demonstrated outstanding communication and selected for Outstanding Graduate Student Teaching Award out of 2,000+ teaching assistants for classes in calculus and advanced math topics

Education

Ph.D. Applied Math • *University of California, Davis* • Davis, CA • Sept. 2021 • GPA 3.9
M.Sc. Math • *Technical University of Munich* • Munich, Germany • Sept. 2015
Visiting researcher • *Hebrew University of Jerusalem* • Jerusalem, Israel • Sept. 2014 – Jun. 2015
Academic exchange • *Technion* • Haifa, Israel • Sept. 2012 – Sept. 2013
B.Sc. Math 1st class honors • *Hong Kong University of Science and Technology* • Hong Kong • Jun. 2011