Lambert Leong

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Education

University of Hawaii — Honolulu, HI
Ph.D in Bioengineering; — *Jan. 2018 – Current*

University of Hawaii — Honolulu, HI
Master of Science in Computer Science; GPA: 3.85 — *Aug. 2016 – Dec. 2018*

University of Oregon — Eugene, Oregon
Bachelor of Science; GPA: 3.2 — *Sept. 2010 – June. 2014*

Thesis

A Heuristic for Optimizing the Physical Layout and Network Topology of Integrated 3D Multi-chip Systems Under Temperature Constraints

Advisor: Henri Casanova Ph.D

- Developed a simulation framework to build multi-chip systems and evaluate metrics such as temperature, network topology, and computational power
- Implemented a random greedy heuristic and parallelized it to allow more layout configurations to be evaluated in a tractable amount of time

Experience

Graduate Researcher **University of Hawaii Cancer Center** *Nov 2018 - Present*

Breast Tomosynthesis: Mammography imaging analysis software (Python, Matlab)

- Developed an algorithm to assess breast cancer risk from 9 mammographic images as oppose to 360 images
- Built a machine learning model to predict breast thickness from non-continuous tomograms

Interval Breast Cancer Analysis: Deep learning software for early cancer detection (Python, Keras)

- Developed code to better train our deep learning models to detect under represented cancer classes

Researcher **Eyegenix LLC** *Aug 2015 - Nov 2018*

Bio-Engineered Cornea (BEC): Class II medical device bio-polymer for transplant

- Refined cell and tissue assays to better predict in-vivo bio-compatibility of developed bio-polymers
- Data analysis to optimize manufacturing and development of the bio-engineered cornea

Graduate Researcher **Social Science Research Institute** *Jun 2017 - Aug 2017*

Hawaii Level of Service Inventory - Revised (LSI-R): Database to track and study prison population in Hawaii (SQL, R)

- Aggregated data and joined tables to construct Hawaiis, Department of Public Safety's, LSI-R database
- Wrote queries and performed data analysis to expedite the writing of quarterly reports

Pathology Trainee **Queen's Medical Center** *Summer 2011 & Summer 2012*

Abstract Publication: "Analysis of KRAS and BRAF mutant colorectal cancers in a multiracial population"

- Analyzed K-Ras mutation data and found Hawaii to have a unique mutation distribution

Cancer and Pathology Research:

- Developed and practiced "wet lab" skills which allowed me to assist in sample processing, testing, and data collection

Projects

- **Genetic Approach to Network Topology Optimization of Integrated 3D Multi-chip Systems**: Implemented a genetic algorithm to explore good layout geometries for systems containing many microprocessor chips (Python, C).
- **Parallel Steganographic Encryption**: Developed a program to encrypt data, with AES, and hide it in images in parallel to achieve 4 times the speed up and an added layer of security (Python, C++, threads, OpenCV).