

Lambert Leong

ML/AI Health Research & Medical Data Science

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Education

- 2019 – 2023 **PhD, Bioengineering**, University of Hawaii, Honolulu, HI, USA. GPA 3.95/4.0
Dissertation: “Reducing the Burden of Cancer With Artificial Intelligence”
Advisor: Prof. John Shepherd
- 2016 – 2018 **MS, Computer Science**, University of Hawaii, Honolulu, HI, USA. GPA 3.89/4.0
Thesis: “A Heuristic for Optimizing the Physical Layout and Network Topology of Integrated 3D Multi-chip Systems Under Temperature Constraints”
Advisor: Prof. Henri Casanova
- 2010 – 2014 **BS, Biology**, University of Oregon, Eugene, OR, USA. GPA 3.2/4.0
Minor: Chemistry

Experience

- 2023 – Present **Postdoctoral Research Fellow**, University of Washington School of Medicine, Seattle, WA
- 2018 – 2023 **Graduate Research Assistant**, University of Hawaii Cancer Center, Honolulu, HI
- 2020 Summer **Research Intern**, National Aeronautics and Space Administration (NASA), Houston, TX
- 2015–2018 **Research Scientist**, Eyegenix LLC, Honolulu, HI
- 2017 **Graduate Research Assistant**, Social Science Research Institute, Honolulu, HI
- 2011 & 2012 **Research Intern, Summer**, The Queen’s Medical Center, Honolulu, HI

HONORS & AWARDS

- 2023 **Merit Based Awards for Research**, Graduate Student Organization, University of Hawaii
- 2023 **Outstanding Dissertation Award**, University of Hawaii
- 2019 - 2021 **Trainee Travel Grant**, University of Hawaii Cancer Center
- 2020 **Graduate Student Organization Research Grant**, University of Hawaii

Publications

Journal Articles

- 2024 **Leong, Lambert T**, Michael C Wong, Yong E Liu, Yannik Glaser, Brandon K Quon, Nisa N Kelly, Devon Cataldi, Peter Sadowski, Steven B Heymsfield, and John A Shepherd. Generative deep learning furthers the understanding of local distributions of fat and muscle on body shape and health using 3d surface scans. *Communications Medicine*, volume 4, page 13. Nature Publishing Group UK London, 2024.
- 2023 Michael C Wong, Jonathan P Bennett, **Leong, Lambert T**, Isaac Y Tian, Yong E Liu, Nisa N Kelly, Cassidy McCarthy, Julia MW Wong, Cara B Ebbeling, David S Ludwig, et al. Monitoring body composition change for intervention studies with advancing 3d optical imaging technology in comparison to dual-energy x-ray absorptiometry. *The American Journal of Clinical Nutrition*, volume 117, pages 802–813. Elsevier, 2023.
- 2023 Michael C Wong, Jonathan P Bennett, Brandon Quon, **Leong, Lambert T**, Isaac Y Tian, Yong E Liu, Nisa N Kelly, Cassidy McCarthy, Dominic Chow, Sergi Pujades, et al. Accuracy and precision of 3-dimensional optical imaging for body composition by age, bmi, and ethnicity. *The American Journal of Clinical Nutrition*, volume 118, pages 657–671. Elsevier, 2023.
- 2023 Michael Wong, Jonathan Bennett, **Leong, Lambert**, Yong Liu, Nisa Kelly, John Cherry, Kate Kloza, Bosco Li, Sandra Iuliano, Jean D Sibonga, et al. Evaluation of body shape as a human body composition assessment in isolated conditions and remote environments. 2023.

- 2023 **Leong, Lambert T.** *REDUCING THE BURDEN OF CANCER WITH ARTIFICIAL INTELLIGENCE: IMAGE-BASED MODELS FOR BREAST CANCER DETECTION, ADVANCED STAGE RISK, AND CROSS-MODALITY VISUALIZATION.* PhD thesis, 2023.
- 2023 Devon Cataldi, Jonathan P Bennett, Brandon K Quon, **Leong, Lambert**, Thomas L Kelly, William J Evans, Carla M Prado, Steven B Heymsfield, and John Shepherd. Association of muscle strength to body composition measures using dxa, d3cr, and bia in collegiate athletes. *medRxiv*, pages 2023–05. Cold Spring Harbor Laboratory Press, 2023.
- 2022 **Leong, Lambert T**, Michael C Wong, Yannik Glaser, Thomas Wolfgruber, Steven B Heymsfield, Peter Sadwoski, and John A Shepherd. Quantitative imaging principles improves medical image learning. (*Under Review*) *arXiv preprint arXiv:2206.06663*, 2022.
- 2022 Yannik Glaser, John Shepherd, **Leong, Lambert**, Thomas Wolfgruber, Li-Yung Lui, Peter Sadowski, and Steven R Cummings. Deep learning predicts all-cause mortality from longitudinal total-body dxa imaging. *Communications medicine*, volume 2, pages 1–12. Nature Publishing Group, 2022.
- 2022 Jonathan P Bennett, Yong En Liu, Brandon K Quon, Nisa N Kelly, **Leong, Lambert T**, Michael C Wong, Samantha F Kennedy, Dominic C Chow, Andrea K Garber, Ethan J Weiss, Steven B Heymsfield, and John A Shepherd. Three-dimensional optical body shape and features improve prediction of metabolic disease risk in a diverse sample of adults. *Obesity*, volume 30. NAASO, The Obesity Society,, 2022.
- 2021 Xun Zhu, Thomas K Wolfgruber, **Leong Lambert**, Matthew Jensen, Christopher Scott, Stacey Winham, Peter Sadowski, Celine Vachon, Karla Kerlikowske, and John A Shepherd. Deep learning predicts interval and screening-detected cancer from screening mammograms: a case-case-control study in 6369 women. *Radiology*, volume 301, pages 550–558. Radiological Society of North America, 2021.
- 2021 **Leong Lambert T**, Serghei Malkov, Karen Drukker, Bethany L Niell, Peter Sadowski, Thomas Wolfgruber, Heather I Greenwood, Bonnie N Joe, Karla Kerlikowske, Maryellen L Giger, et al. Dual-energy three-compartment breast imaging for compositional biomarkers to improve detection of malignant lesions. *Communications Medicine*, volume 1, pages 1–11. Nature Publishing Group, 2021.
- [Refereed Conference Proceedings](#)
- 2021 **Leong Lambert**, Michael Wong, Yong En Liu, Nisa N. Kelly, Michaela Piazza, Siobhan Garry, Steve B. Heymsfield, and John A. Shepherd. Creating accurate representations of dxa scans from 3d optical body surface scans for arbitrary regional body composition analysis. In *3DBODY.TECH Conference & Expo*. 3DBODY.TECH, Oct 2021.
- 2020 **Leong Lambert T** and Sean Wiere. Digit recognition from wrist movements and security concerns with smart wrist wearable iot devices. In *53rd Hawaii International Conference on System Sciences*. HICSS, 2020.
- 2020 **Leong Lambert**, Maryellen Giger, Karen Drukker, Karla Kerlikowske, Bonnie Joe, Heather Greenwood, Serghei Markov, Bethany Niell, and John Shepherd. Three compartment breast machine learning model for improving computer-aided detection. In *15th International Workshop on Breast Imaging (IWBI2020)*, volume 11513, page 115130M. International Society for Optics and Photonics, 2020.
- 2019 Michihiro Koibuchi, **Leong Lambert**, Tomohiro Totoki, Naoya Niwa, Hiroki Matsutani, Hideharu Amano, and Henri Casanova. Sparse 3-d nocs with inductive coupling. In *2019 56th ACM/IEEE Design Automation Conference (DAC)*, pages 1–6. IEEE, 2019.
- [Invited Presentations and Abstracts](#)
- 2022 Dustin Valdez, Jami Fukui, Thomas Wolfgruber, **Leong, Lambert**, Gertraud Maskarinec, and John Shepherd. Abstract p3-01-13: Comparing portable and clinical ultrasound systems using 3d printed breast phantom inserts. *Cancer Research*, volume 82, pages P3–01. The American Association for Cancer Research, 2022.
- 2021 Xun Zhu, Thomas K Wolfgruber, **Leong Lambert**, Matthew Jensen, Christopher Scott, Stacey Winham, Peter Sadowski, Celine Vachon, Karla Kerlikowske, and John A Shepherd. Deep learning predicts interval and screening-detected cancer from screening mammograms: a case-case-control study in 6369 women. Radiological Society of North America (RSNA), Dec 2021.

- 2020 Michael Wong, Yong En Liu, Dylan Lowe, Jonathan Bennett, **Leong Lambert**, Ethan Weiss, Steven Heymsfield, and John Shepherd. Detecting significant body composition change with reposed three-dimensional optical surface scans. In *OBESITY*, volume 28, pages 75–75. Obesity, 2020.
- 2019 **Leong Lambert**, Thomas Wolfgruber, Shane Spencer, Serge Muller, and John Shepherd. Accurate local estimation of compressed breast thickness in digital breast tomosynthesis using an iterative reconstruction approach. Radiological Society of North America (RSNA), Dec 2019.
- 2012 Jared David Acoba, Christopher A Lum, and **Leong, Lambert T**. Analysis of kras and braf mutant colorectal cancers in a multiracial population. American Society of Clinical Oncology (ASCO), 2012.

Correspondences

- 2020 **Leong, Lambert T**. Correspondence: Preoperative assessment of breast cancer: Multireader comparison of contrast-enhanced mri versus the combination of unenhanced mri and digital breast tomosynthesis. *The Breast: official journal of the European Society of Mastology*, volume 51, page 102. Elsevier, 2020.

Misc. Publications and White Papers

- 2020 **Leong, Lambert T**. Snapshot samplings of the bitcoin transaction network and analysis of cryptocurrency growth. *arXiv preprint arXiv:2003.06068*, 2020.
- 2018 **Leong, Lambert**. A heuristic for optimizing the physical layout and network topology of integrated 3d multi-chip systems under temperature constraints. Master's thesis, University of Hawai'i at Manoa, 2018.