

**RESEARCH INTEREST:** AI in healthcare, computer vision, and image and video processing.

## EDUCATION

- Jun 2019 **PhD in Computer Science**, MIT, Cambridge, MA, GPA 5.0/5.0  
Thesis: "*Learning to solve problems in computer vision with synthetic data*" under supervision of Prof. Frédo Durand.
- Jun 2015 **SM in Computer Science**, MIT, Cambridge, MA, GPA 5.0/5.0
- Jun 2012 **MS in Electrical Eng.**, Stanford University, Palo Alto, CA, GPA 3.82/4.00
- Jun 2012 **BS in Physics (Distinction)**, Stanford University, Palo Alto, CA, GPA 4.02/4.00

## EXPERIENCE

- Jun 2019 – present **Senior Software Engineer**, Google Health, Palo Alto, CA.  
Using computer vision and AI to detect and classify cancer in pathology slides, working with Gigapixel images and scalable machine learning pipelines.
- Sep 2012 – Jun 2019 **Research Assistant**, MIT Computer Graphics Group, Cambridge, MA.  
Using synthetic data to solve vision problems such as motion magnification and image restoration from low-quality imaging pipelines. (Pytorch, Python, Tensorflow, Halide)
- Jun 2017 – Sep 2017 **Software Engineering Intern**, Google Brain, Mountain View, CA.  
Built a deep learning pipeline to detect bacteria in pathology slides and led the effort to source for data from organizations in a developing country. (Tensorflow, Python)
- Jun 2015 – Aug 2015 **Software Engineering Intern**, Facebook Inc., Cambridge, MA.  
Developed non-photo realistic effect on the Facebook iOS app and coordinated an effort to integrate a high-performance image processing library with the internal build system. (iOS)
- Jun 2014 – Aug 2014 **Software Engineering Intern**, Instagram, Menlo Park, CA.  
Designed the photo enhancement algorithm for low-end android phones and implemented the perspective correction tool in the Instagram android app. (Android, Python, OpenCV)
- Jun 2013 – Aug 2013 **Research Intern**, Adobe Systems, Cambridge, MA.  
Developed and collected data for an ML-based algorithm to assist users in image editing by giving feedback based on image quality. (Matlab, Amazon MTurk)

## SKILLS

**PROGRAMMING LANGUAGE:** Python, C/C++, Javascript

**SOFTWARE PACKAGES:** MATLAB, OpenCV, git, Tensorflow

## PUBLICATIONS

- May 2024 Yang, L., et al, *Advancing Multimodal Medical Capabilities of Gemini*, arXiv Preprint arXiv: 2405.03162.
- Mar 2024 Schaekermann, M., Spitz, T., Pyles, M., Cole-Lewis, H., Wulczyn, E., Pfohl, S.R., Martin, D., **Jaroensri, R.**, Keeling, G., Liu, Y. and Farquhar, S. *Health equity assessment of machine learning performance (HEAL): a framework and dermatology AI model case study*. EClinicalMedicine, The Lancet
- Apr 2023 Srinivas, A.A., **Jaroensri, R.**, Wulczyn, E., Wren, J.H., Thompson, E.E., Olson, N., Beckers, F., Miao, M., Liu, Y., Chen, C. and Steiner, D.F. *Estrogen receptor gene expression prediction from H&E-stained whole slide images*. Cancer Research, Poster at the AACR Annual Meeting 2023.
- Oct 2022 **Jaroensri, R.**, Wulczyn, E., Hegde, N., Brown, T., Flament-Auvigne, I., Tan, F., Cai, Y., Nagpal, K., Rakha, E.A., Dabbs, D.J. and Olson, N. *Deep learning models for histologic grading of breast cancer and association with disease prognosis*. Npj Breast Cancer

- Jul 2021 Gamble, P\*, **Jaroensri, R.\***, Wang, H., Tan, F., Moran, M., Brown, T., Flament-Auvigne, I., Rakha, E.A., Toss, M., Dabbs, D.J. and Regitnig, P. *Determining breast cancer biomarker status and associated morphological features using deep learning*. Communications medicine
- Jul 2020 Rakha, E. A., Toss, M., Shiino, S., Gamble, P., **Jaroensri, R.**, Mermel, C. H., & Chen, P. H. C. *Current and future applications of artificial intelligence in pathology: a clinical perspective*. Journal of Clinical Pathology.
- Jan 2020 Ibrahim, A., Gamble, P., **Jaroensri, R.**, Abdelsamea, M. M., Mermel, C. H., Chen, P. H. C., & Rakha, E. A. *Artificial intelligence in digital breast pathology: Techniques and applications*. The Breast, 49, 267-273.
- May 2019 **Jaroensri, R.**, Biscarrat, C., Aittala, M., & Durand, F. *Generating training data for denoising real rgb images via camera pipeline simulation*. arXiv preprint arXiv:1904.08825.
- Sep 2018 **Jaroensri, R.\***, Oh, T.\*, Kim, C., Elgharib, M, Durand, F. , Freeman, W., & Matusik, W. *Learning-based Video Motion Magnification*. European Conference on Computer Vision (Oral).
- Jun 2018 **Jaroensri, R.\***, Zlateski, A.\*, Sharma, P., & Durand, F. *On the Importance of Label Quality for Semantic Segmentation*. Computer Vision and Pattern Recognition (Poster)
- Aug 2017 **Jaroensri, R.\***, Zhao, A.\*, Balakrishnan, G., Lo, D., Schmahmann, J. D., Durand, F., & Guttag, J *A Video-Based Method for Automatically Rating Ataxia*. Machine Learning for Healthcare (Poster).
- Apr 2015 **Jaroensri, R.**, Paris, S., Hertzmann, A., Bychkovsky, V., & Durand, F. *Predicting Range of Acceptable Photographic Tonal Adjustments*. International Conference on Computational Photography (Poster)

## AWARDS

- 2011 **Levine Award for the Most Outstanding Physics Junior**, Stanford University
- 2009 **President's Award for Academic Excellence**, Stanford University
- 2006 **Gold Medal**, 37<sup>th</sup> International Physics Olympiad in Singapore
- 2005 **Silver Medal**, 36<sup>th</sup> International Physics Olympiad in Salamanca, Spain

## VOLUNTEERING

- 2023 - 24 **Secretary**, Tahoe Committee, El Dorado Search and Rescue Council, 501(c)3
- 2023 - 24 **Search and Rescue Volunteer**, Douglas County Sheriff's Department, NV
- 2021 - 24 **Search and Rescue Volunteer**, El Dorado County Sheriff's Department, CA
- 2017 **Board of Director**, Southeast Asian Service Leadership Network, 501(c)3

## PAPER REVIEW

- Conferences
- International Conference on Computer Vision 2019, 2021, 2023
  - Conference on Computer Vision and Pattern Recognition 2021-2023
  - European Conference on Computer Vision 2020, 2022, 2024
  - Medical Image Computing & Computer Assisted Intervention 2020-2024
  - Neural Information Processing Systems 2022
  - International Conference on Learning Representations 2022-2024
  - International Conference on Machine Learning 2024
  - AAAI Conference on Artificial Intelligence 2020-2024
- Journals
- ACM Computing Surveys
  - Nature Scientific Reports
  - BMJ Open
  - NPJ breast Cancer