Kelvin Li Zhenghao

Consultant, Ophthalmology, TTSH

Research and Innovation Interests:

- Artificial intelligence
- Digital Health
- Tele-Ophthalmology
- Ocular Imaging

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Biography

Asst Prof Kelvin Li is a Consultant with the Department of Ophthalmology, Tan Tock Seng Hospital. He sub-specialises in Neuro-Ophthalmology, a subspecialty of Ophthalmology that deals with neurological diseases with eye manifestations.

He completed his undergraduate medical training at the Yong Loo Lin School of Medicine, National University of Singapore in 2011 and obtained his Master of Medicine (Ophthalmology) in 2019. He joined the Fellowship of the Royal College of Ophthalmologists (United Kingdom) and the Fellowship of the Academy of Medicine, Singapore in 2021. In 2024, he completed a Master of Technology (Intelligent Systems) at NUS-ISS, where he was twice awarded the CEO Honour's List and received the Best Capstone Project award. From 2024–2025, he undertook a research fellowship at the Stanford Byers Eye Institute, Stanford University, where he also served as a team mentor for Biodesign for Digital Health (Fall Quarter AY 2024–2025). He currently holds appointments as Clinical Lecturer at NUS Yong Loo Lin School of Medicine and Assistant Professor at Lee Kong Chian School of Medicine, NTU.

Asst Prof Kelvin previously served as Chief Medical Officer (2018) and Chief Registrar (2020) for the NHG Ophthalmology programme and was part of the Singapore Chief Residency Programme (SCRP) 6th Cohort in 2019. He actively trains junior doctors in leadership roles through his participation in the Resident Engagement and Leadership (REAL) Committee.

He has presented at numerous international, regional, and local conferences and is a reviewer for leading digital health journals. His contributions have been recognized with the Achievement Award from the Asia-Pacific Academy of Ophthalmology (2019) and the Young Investigator Award (Bronze) at the Singapore Healthcare and Biomedical Congress. He also completed the AI for Industry program with AI Singapore and foundational training in AI with Python. His research interests include ocular imaging

and the application of data science and artificial intelligence in ophthalmology and healthcare. Passionate about healthcare innovation, he completed the Centre for Healthcare Innovation (CHI) Fellowship in Healthcare Innovation and Leadership in 2022 and now serves on the CHI faculty and editorial board. Concurrently, he is the Clinical Lead for Innovation and Digitalisation at TTSH Ophthalmology.

Selected Publications

- Clarence, S. Y. K., Alva, L. K. S., Yung, A. W., Charlene, C. S. Y., Xiuyi, F., & **Kelvin, L. Z.** (2025). The Use of Large Language Models in Ophthalmology: A Scoping Review on Current Use-Cases and Considerations for Future Works in this field. *Big Data and Cognitive Computing*, *9*(6), 151. https://doi.org/10.3390/bdcc9060151

- **Li, K. Z**., Nguyen, T. T., & Moss, H. E. (2025). Performance of vision language models for optic disc swelling identification on fundus photographs. *Frontiers in Digital Health*, *7*, 1660887. https://doi.org/10.3389/fdgth.2025.1660887

- Wang, L. R., Chia, S. Y. C., Yip, V. C., **Li, K. Z.**, & Fan, X. (2025). Integrating Clinical Insights via Hierarchical Inference to Predict Conditions in Bilaterally Symmetric Organs. *IEEE Journal of Biomedical and Health Informatics*, *29*(8), 5656–5666. https://doi.org/10.1109/jbhi.2025.3556717

- Goh, E. J. H., Xu, C., **Li, K. Z.**, Lai, A. H. O., Au, R. T. M., & Chin, C. F. (2024). A case of microscopic polyangiitis and giant cell arteritis presenting with unilateral visual loss. *Journal of Neuro-Ophthalmology*, *45*(3), e195–e196. https://doi.org/10.1097/wno.0000000000002210

- Koh, Y., Pandiyan, P. S., Chin, C. F., Lim, Z. V., Lee, J. S. S., Ding, C., Manghani, M., & **Li, K. Z**. (2024). Calciphylaxis in a Middle-Aged Asian Patient: An Unusual Cause of Disc Swelling. *Neuro-Ophthalmology*, *49*(2), 161–166. https://doi.org/10.1080/01658107.2024.2386731

- Kumar, R. S., **Li, K. Z.**, Chia, S. Y. C., Wang, L. R., Yip, V. C. H., Ngo, W. K., Ng, Y. Y., & Fan, X. (2024). On Identifying Effective Investigations with Feature Finding Using Explainable AI: An Ophthalmology Case Study. In *Lecture notes in computer science* (pp. 324–334). https://doi.org/10.1007/978-3-031-66535-6_34

- Yap, B. P., **Kelvin, L. Z.**, Toh, E. Q., Low, K. Y., Rani, S. K., Goh, E. J. H., Hui, V. Y. C., Ng, B. K., & Lim, T. H. (2024). Generalizability of deep neural networks for vertical Cup-to-Disc ratio estimation in Ultra-Widefield and Smartphone-Based FundUS images. *Translational Vision Science & Technology*, *13*(4), 6. https://doi.org/10.1167/tvst.13.4.6

- Hoe, R. H. M., **Li, K. Z.**, Lai, Y. W., & Umapathi, T. (2023). Oculopalatal tremor in a patient with acute COVID-19 brainstem encephalitis. *Journal of Neuro-Ophthalmology*, *44*(2), e259–e260. https://doi.org/10.1097/wno.0000000000001839

- Yunqi, K., **Kelvin, L. Z.**, Lian, Y. S., Min, Q. H., Sheryl, T. H., Min, M. C., Fang, T. Y., Wai, K. L., Hau, C. C., Hui, Y. V. C., Yau, V. Y. K., & Tym, W. H. (2023). Impact of Community Eye clinics (CEC) on specialist eye clinic referrals. *Ophthalmic Epidemiology*, *31*(4), 315–320. https://doi.org/10.1080/09286586.2023.2261528

- Umapathi, T., **Li, K. Z.**, Chin, C. F., Vijakumar, K., Tan, G. S. E., Ung, P. H., Yeo, T. K., & Agrawal, R. (2021). Acute isolated near vision difficulty in patients with COVID-19 infection. *Journal of Neuro-Ophthalmology*, *41*(3), e279–e282. https://doi.org/10.1097/wno.0000000000001120

- **Li, K. Z.**, Yong, V. K. Y., Lee, L. K. M., Chin, C. F., & Yip, L. W. L. (2020). When ophthalmologists step up to the COVID-19 frontlines. *Eye*, *34*(7), 1237–1238. https://doi.org/10.1038/s41433-020-0918-9

Notable Research Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
Co-I of Development of a fundus-image based AI algorithm for the screening of osteoporosis, LKC School of Medicine and National Health Innovation Centre Singapore, Exploratory Translational (ET) Grant. Approved Budget: SGD$100,000	2024

Translating Research and Innovation Into Healthcare

- GovInsider (26 Nov 2025): Health on the fast track: How HealthTech is innovating and scaling securely https://govinsider.asia/intl-en/article/health-on-the-fast-track-how-healthtech-is-innovating-and-scaling-securely

- CNA's Singapore Tonight (21 May 2025): https://www.channelnewsasia.com/watch/new-improvements-healthtech-collaboration-platform-rolled-out-5145051?cid=internal_sharetool_iphone_21052025_cna

- News 5 Tonight (21 May 2025): https://www.mewatch.sg/episode/May-2025-CH-5-News-Tonight-538172 *// Requires personal device. Scroll to 19:24min onwards*

- Also featured on Synapxe SG website, during the inaugural HealthTechX Asia event (21 May 2025): New HealthX Sandbox 2.0 accelerates HealthTech Innovation

(https://www.synapxe.sg/media-releases/innovation/new-healthx-sandbox) > Annex A: Featured Sandbox Used-Cases (https://mc-ae878fb3-424b-4ec4-86b1-1740-cdn-endpoint.azureedge.net/-/media/project/synapxe/media/media-release/21-may-2025/annex-a---featured-sandbox-use-cases.pdf?rev=b6199d2651c04c34aa3ad6b9ed363224&hash=8798F66C9F2EF16ED90569F45EE922A2)