Stanford

Thodsawit Tiyarattanachai

- Affiliate, Department Funds
- Resident in Radiology

Bio

BIO

I pursue my career path as a physician-scientist in the field of Radiology and Biomedical Data Science. My focus is translational research aiming to develop clinically relevant AI systems. I have conducted research on artificial intelligence (AI) system to improve ultrasound surveillance for hepatocellular carcinoma (HCC), deep learning models for the assessment of hepatic steatosis, Liver Imaging Reporting and Data System (LI-RADS) for B-mode and contrast-enhanced ultrasound, as well as AI techniques for quantitative analysis of such imaging modalities.

HONORS AND AWARDS

- Fulbright Thai Graduate Scholarship, Thailand - United States Educational Foundation (TUSEF) (2023-2025)
- Early Career Seed Grant, Society of Radiologists in Ultrasound (SRU) (2024)

PROFESSIONAL EDUCATION

- PhD, Chulalongkorn University, Bangkok, Thailand , Clinical Sciences (International Program) (2023)
- MD (First class honors), Chulalongkorn University, Bangkok, Thailand , Doctor of Medicine (2020)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

artificial intelligence

medical imaging

ultrasound

screening and surveillance of liver cancer

cancer prediction models

cancer biomarkers

Publications

PUBLICATIONS

- **Artificial intelligence assists operators in real-time detection of focal liver lesions during ultrasound: A randomized controlled study** *EUROPEAN JOURNAL OF RADIOLOGY*
  Tiyarattanachai, T., Apiparakoon, T., Chaichuen, O., Sukcharoen, S., Yimsawad, S., Jangsirikul, S., Chaikajornwat, J., Siriwong, N., Burana, C., Siritaweechai, N., Atipas, K., Assawamasbunlue, N., Tovichayathamrong, et al
  2023; 165: 110932

- **A Comprehensive Motion Compensation Method for In-Plane and Out-of-Plane Motion in Dynamic Contrast-Enhanced Ultrasound of Focal Liver Lesions.** *Ultrasound in medicine & biology*
  Tiyarattanachai, T., Turco, S., Eisenbrey, J. R., Wessner, C. E., Medellin-Kowalewski, A., Wilson, S., Lyshchik, A., Kamaya, A., Kaffas, A. E.
  2022

- **The feasibility to use artificial intelligence to aid detecting focal liver lesions in real-time ultrasound: a preliminary study based on videos** *SCIENTIFIC REPORTS*
  Tiyarattanachai, T., Apiparakoon, T., Marukatat, S., Sukcharoen, S., Yimsawad, S., Chaichuen, O., Bhumiwat, S., Tanpowpong, N., Pinjaroen, N., Rerknimitr, R., Chaiteerakij, R.
  2022; 12 (1): 7749

- **Multicenter Study of ACR Ultrasound LI-RADS Visualization Scores on Serial Examinations: Implications for Changes in Surveillance Strategies.** *AJR. American journal of roentgenology*
  Tiyarattanachai, T., Fetzer, D. T., Kamaya, A.
  2022

- **Ultrasound Liver Imaging Reporting and Data System (US LI-RADS) Visualization Score: a reliability analysis on inter-reader agreement.** *Abdominal radiology (New York)*
  Tiyarattanachai, T., Bird, K. N., Lo, E. C., Mariano, A. T., Ho, A. A., Ferguson, C. W., Chima, R. S., Desser, T. S., Morimoto, L. N., Kamaya, A.
  2021

- **Development and validation of artificial intelligence to detect and diagnose liver lesions from ultrasound images** *PLOS ONE*
  Tiyarattanachai, T., Apiparakoon, T., Marukatat, S., Sukcharoen, S., Geratikornsupuk, N., Anukulkarnkusol, N., Mekaroonkamol, P., Tanpowpong, N., Sarakul, P., Rerknimitr, R., Chaiteerakij, R.
  2021; 16 (6): e0252882

- **Follow-up imaging and surgical costs associated with different guidelines for management of incidentally detected gallbladder polyps.** *Academic radiology*
  Vo-Phamhi, J. M., Tiyarattanachai, T., Matuszczak, M., Shen, L., Kim, S., Kamaya, A.
  2024

- **VOCs from Exhaled Breath for the Diagnosis of Hepatocellular Carcinoma** *DIAGNOSTICS*
  Sukaram, T., Apiparakoon, T., Tiyarattanachai, T., Ariyaskul, D., Kulkraisri, K., Marukatat, S., Rerknimitr, R., Chaiteerakij, R.
  2023; 13 (2)

- **Circulating tumor cells as a prognostic biomarker in patients with hepatocellular carcinoma** *SCIENTIFIC REPORTS*
  Prasoppokakorn, T., Buntho, A., Ingrungruanglert, P., Tiyarattanachai, T., Jaihan, T., Kulkraisri, K., Ariyaskul, D., Phathong, C., Israsena, N., Rerknimitr, R., Treeprasertsuk, S., Chaiteerakij, R.
  2022; 12 (1): 18686

- **Positive predictive value of LI-RADS US-3 observations: multivariable analysis of clinical and imaging features.** *Abdominal radiology (New York)*
  Tse, J. R., Shen, L., Tiyarattanachai, T., Bird, K. N., Liang, T., Yoon, L., Kamaya, A.
  2022

- **PERFORMANCE OF ABBREVIATED MAGNETIC RESONANCE IMAGING VERSUS ULTRASONOGRAPHY AS AN IMAGING TOOL FOR HEPATOCELLULAR CARCINOMA SURVEILLANCE**
  Navadurong, H., Laohasurayotin, K., Yorwittaya, K., Tiyarattanachai, T., Tanpowpong, N., Pisuchpen, N., Chaiteerakij, R., Treeprasertsuk, S., Rerknimitr, R.
  BMJ PUBLISHING GROUP.2022: A85

- **Interobserver agreement between eight observers using IOTA simple rules and O-RADS lexicon descriptors for adnexal masses.** *Abdominal radiology (New York)*
  Antil, N., Raghu, P. R., Shen, L., Tiyarattanachai, T., Chang, E. M., Ferguson, C. W., Ho, A. A., Lutz, A. M., Mariano, A. J., Morimoto, L. N., Kamaya, A.
  2022

- **Exhaled volatile organic compounds for diagnosis of hepatocellular carcinoma** *SCIENTIFIC REPORTS*
  Sukaram, T., Tansawat, R., Apiparakoon, T., Tiyarattanachai, T., Marukatat, S., Rerknimitr, R., Chaiteerakij, R.
  2022; 12 (1): 5326

- **Interpretable machine learning for characterization of focal liver lesions by contrast-enhanced ultrasound.** *IEEE transactions on ultrasonics, ferroelectrics, and frequency control*
  Turco, S., Tiyarattanachai, T., Ebrahimkheil, K., Eisenbrey, J., Kamaya, A., Mischi, M., Lyshchik, A., El Kaffas, A.
  2022; PP

- **Application of artificial intelligence for diagnosis of pancreatic ductal adenocarcinoma by EUS: A systematic review and meta-analysis** *ENDOSCOPIC ULTRASOUND*
  Prasoppokakorn, T., Tiyarattanachai, T., Chaiteerakij, R., Decharatanachart, P., Mekaroonkamol, P., Ridtitid, W., Kongkam, P., Rerknimitr, R.
  2022; 11 (1): 17-26

- **Application of artificial intelligence in non-alcoholic fatty liver disease and liver fibrosis: a systematic review and meta-analysis** *THERAPEUTIC ADVANCES IN GASTROENTEROLOGY*
  Decharatanachart, P., Chaiteerakij, R., Tiyarattanachai, T., Treeprasertsuk, S.
  2021; 14: 17562848211062807

- **Application of artificial intelligence in chronic liver diseases: a systematic review and meta-analysis** *BMC GASTROENTEROLOGY*
  Decharatanachart, P., Chaiteerakij, R., Tiyarattanachai, T., Treeprasertsuk, S.
  2021; 21 (1): 10