Stanford

Liu Yang

Postdoctoral Scholar, Anesthesiology, Perioperative and Pain Medicine

Bio

BIO

Liu Yang is currently a postdoctoral scholar at Stanford University, School of Medicine.

Her research interests span the areas of machine learning, signal processing, and Bayesian inference, along with their biomedical applications for improving patient outcomes.

In 2024, Liu earned her Ph.D. in Electrical Engineering at Stony Brook University, Stony Brook, NY, USA, and she previously received B.S. in Communications Engineering and M.S. in Signal and Information Processing from Jiangnan University, Wuxi, Jiangsu, China. From mid-2016 to mid-2017, she was a visiting graduate student at the University of Missouri, Columbia, MO, USA.

INSTITUTE AFFILIATIONS

- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- MCHRI Postdoctoral Fellowship, Stanford Maternal and Child Health Research Institute (2025)
- Nominee for the NIH Director’s Early Independence Award, Stony Brook University (2022)
- iREDEFINE Professional Development Award, ECEDHA (2022)
- National Scholarship, Chinese Ministry of Education (2016)
- Outstanding Graduate Student Award, Jiangnan University (2015)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, IEEE Engineering in Medicine and Biology Society (2023 - present)
- Member, Institute of Electrical and Electronics Engineers (2017 - present)
- Member, IEEE Signal Processing Society (2017 - present)
- Member, IEEE Women in Engineering (2017 - present)
- Reviewer, Digital Signal Processing (2020 - present)
- Reviewer, Signal Processing (2021 - present)
- Reviewer, International Conference on Acoustics, Speech, and Signal Processing (2021 - present)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stony Brook University , Electrical Engineering - Signal Processing and Machine Learning (2024)

- Master of Science, Jiangnan University , Signal and Information Processing (2017)
- Bachelor of Science, Jiangnan University , Communications (Internet of Things) Engineering (2014)

STANFORD ADVISORS

- Nima Aghaeepour, Postdoctoral Faculty Sponsor

LINKS

- Google Scholar: https://scholar.google.com/citations?user=E8XlXigAAAAJ&hl=en
- Research Gate: https://www.researchgate.net/profile/Liu-Yang-187
- Linkedin: www.linkedin.com/in/liuyang90081

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My current focus lies in analyzing bedside monitoring waveforms and electronic health record data to understand their correlations with adverse conditions in premature infants, and to explore effective solutions that can enhance the outcomes for these vulnerable patients.

LAB AFFILIATIONS

- Nima Aghaeepour, Aghaeepour Laboratory (5/1/2024)

Publications

PUBLICATIONS

- **Development and validation of a pre-trained language model for neonatal morbidities: a retrospective, multicentre, prognostic study.** *The Lancet. Digital health*
  Xie, F., Chung, P., Reiss, J. D., Tjoa, E., De Francesco, D., Phongpreecha, T., Haberkorn, W., Chakraborty, D., Chang, A. L., James, T., Kim, Y., Mataraso, S., Espinosa, et al
  2025: 100926
- **Advancements in Fetal Heart Rate Monitoring: A Report on Opportunities and Strategic Initiatives for Better Intrapartum Care.** *BJOG : an international journal of obstetrics and gynaecology*
  Lovers, A., Daumer, M., Frasch, M. G., Ugwumadu, A., Warrick, P., Vullings, R., Pini, N., Tolladay, J., Petersen, O. B., Lederer, C., Yang, L., Djurić, P. M., Abtahi, et al
  2025; 132 (7): 853-866
- **Digital twins, synthetic patient data, and in-silico trials: can they empower paediatric clinical trials?** *The Lancet. Digital health*
  Pammi, M., Shah, P. S., Yang, L. K., Hagan, J., Aghaeepour, N., Neu, J.
  2025: 100851
- **Ventriculomegaly without elevated intracranial pressure? Normal pressure hydrocephalus as a disorder of the cerebral windkessel** *FRONTIERS IN NEUROLOGY*
  Mani, R., Basem, J., Yang, L., Abdolmaleki, N., Ravishankar, A., Fiore, S., Djuric, P., Egnor, M.
  2025; 16: 1591275
- **AI-guided precision parenteral nutrition for neonatal intensive care units.** *Nature medicine*
  Phongpreecha, T., Ghanem, M., Reiss, J. D., Oskotsky, T., Mataraso, S. J., De Francesco, D., Reincke, S. M., Espinosa, C., Chung, P., Ng, T., Costello, J. M., Sequoia, J. A., Razdan, et al
  2025
- **Review of theories into the pathogenesis of normal pressure hydrocephalus.** *BMJ neurology open*
  Mani, R., Basem, J., Yang, L., Fiore, S., Djuric, P., Egnor, M.
  2024; 6 (2): e000804
- **Sequential Detection of Anomalies in Noisy Outputs of an Unknown Function Using Gaussian and Yule-Simon Processes** *ICASSP 2024 - 2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),*

Yang, L., Butler, K., Djurić, P. M.
2024: 7205-7209

- **A quantitative model of the cerebral windkessel and its relevance to disorders of intracranial dynamics** *Journal of Neurosurgery: Pediatrics*
  Egnor, M., Yang, L., Mani, R. M., Fiore, S. M., Djurić, P. M.
  2023; 32 (3): 302–311
- **Why don't ventricles dilate in pseudotumor cerebri? A circuit model of the cerebral windkessel.** *Journal of neurosurgery. Pediatrics*
  Wang, Z., Yang, L., Djurić, P. M., Egnor, M. R.
  2022; 29 (6): 719-726
- **UNSUPERVISED CLUSTERING AND ANALYSIS OF CONTRACTION-DEPENDENT FETAL HEART RATE SEGMENTS.** *Proceedings of the ... IEEE International Conference on Acoustics, Speech, and Signal Processing. ICASSP (Conference)*
  Yang, L., Heiselman, C., Quirk, J. G., Djurić, P. M.
  2022; 2022
- **Unsupervised Detection of Anomalies in Fetal Heart Rate Tracings using Phase Space Reconstruction.** *Proceedings of the ... European Signal Processing Conference (EUSIPCO). EUSIPCO (Conference)*
  Yang, L., Ajirak, M., Heiselman, C., Quirk, J. G., Djurić, P. M.
  2021; 2021: 1321-1325
- **IDENTIFICATION OF UTERINE CONTRACTIONS BY AN ENSEMBLE OF GAUSSIAN PROCESSES.** *Proceedings of the ... IEEE International Conference on Acoustics, Speech, and Signal Processing. ICASSP (Conference)*
  Yang, L., Heiselman, C., Quirk, J. G., Djurić, P. M.
  2021; 2021
- **CLASS-IMBALANCED CLASSIFIERS USING ENSEMBLES OF GAUSSIAN PROCESSES AND GAUSSIAN PROCESS LATENT VARIABLE MODELS.** *Proceedings of the ... IEEE International Conference on Acoustics, Speech, and Signal Processing. ICASSP (Conference)*
  Yang, L., Heiselman, C., Quirk, J. G., Djurić, P. M.
  2021; 2021
- **Particle Filtering Under General Regime Switching**
  El-Laham, Y., Yang, L., Djuric, P. M., Bugallo, M. F., IEEE
  IEEE.2021: 2378-2382
- **PARTICLE GIBBS SAMPLING FOR REGIME-SWITCHING STATE-SPACE MODELS**
  El-Laham, Y., Yang, L., Lynch, H. J., Djuric, P. M., Bugallo, M. F., IEEE
  IEEE.2021: 5579-5583
- **INDOOR ALTITUDE ESTIMATION OF UNMANNED AERIAL VEHICLES USING A BANK OF KALMAN FILTERS**
  Yang, L., Wang, H., El-Laham, Y., Lamas Fonte, J., Perez, D., Bugallo, M. F., IEEE
  IEEE.2020: 5455-5459
- **MOVING TARGET LOCALIZATION IN MULTISTATIC SONAR USING TIME DELAYS, DOPPLER SHIFTS AND ARRIVAL ANGLES**
  Yang, L., Yang, L., Ho, K. C., IEEE
  IEEE.2017: 3399-3403
- **TDOA-FDOA source geolocation using moving horizon estimation with satellite location errors** *2017 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM)*
  Shan, C., Yang, L., Yang, L., Li, X., Li, W.
  2017
- **Moving Target Localization in Multistatic Sonar by Differential Delays and Doppler Shifts** *IEEE SIGNAL PROCESSING LETTERS*
  Yang, L., Yang, L., Ho, K. C.
  2016; 23 (9): 1160-1164