Stanford

Tanmoy Sarkar Pias

Postdoctoral Scholar, Urology

Curriculum Vitae available Online

Bio

BIO

I am currently working on multimodal, multi-task foundation models to detect cancer and improve surgery. I am exploring image segmentation models, foundation models, and reinforcement learning with agents. My previous work spans a range of directions, including knowledge-guided machine learning models, systematic evaluation of high-risk models, mitigation of deficiencies and biases, automatic generation of gradient-based test cases, decision boundary estimation and analysis of deep learning models, and developing approaches to make machine learning models more fair and reliable.

HONORS AND AWARDS

- Featured Research Paper, Nature Portfolio - Communication Medicine (2025)
- Kafura Fellowship, Department of Computer Science at Virginia Tech (2025)
- Spotlight Student, Sanghani Center for Artificial Intelligence and Data Analytics at Virginia Tech (2025)
- BitShare Fellowship, Department of Computer Science at Virginia Tech (2021)
- Best Conference Paper Award, IEEE ECICE conference (2019)
- Dean’s Award, BUET (2017)

PROFESSIONAL EDUCATION

- Postdoctoral Training, Stanford University
- Doctor of Philosophy, Virginia Polytechnic Institute & State University (2025)
- Master of Science, Virginia Polytechnic Institute & State University (2023)
- Bachelor of Science, Bangladesh Universityof Engineering&TechnologyBUET (2018)

STANFORD ADVISORS

- Geoffrey Sonn, Postdoctoral Faculty Sponsor
- Mirabela Rusu, Postdoctoral Research Mentor

LINKS

- Google Scholar: https://scholar.google.com/citations?user=wWSwk3YAAAAJ&hl=en
- LinkedIn: https://www.linkedin.com/in/tanmoy-sarkar-pias-446060140
- ORCID: https://orcid.org/0000-0002-7325-9844

Publications

PUBLICATIONS

- **Enhancing Fairness and Accuracy in Diagnosing Type 2 Diabetes in Young Adult Population.** *IEEE journal of biomedical and health informatics*
  Pias, T. S., Su, Y., Tang, X., Wang, H., Faghani, S., Yao, D.
  2026; 30 (4): 3321-3330

- **Optimizing stability of heart disease prediction across imbalanced learning with interpretable Grow Network** *COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE*
  Bin Akter, S., Akter, S., Hasan, R., Hasan, M., Eisenberg, D., Azim, R., Fernandez, J., Pias, T.
  2025; 265: 108702

- **Low responsiveness of machine learning models to critical or deteriorating health conditions** *COMMUNICATIONS MEDICINE*
  Pias, T., Afrose, S., Das Tuli, M., Trisha, I., Deng, X., Nemeroff, C. B., Yao, D.
  2025; 5 (1): 62

- **Early detection of subjective cognitive decline from self-reported symptoms: An interpretable attention-cost fusion approach** *JOURNAL OF BIOMEDICAL INFORMATICS*
  Bin Akter, S., Akter, S., Hasan, R., Hasan, M., Islam, A., Pias, T., Fernandez, J., Alam, M., Eisenberg, D.
  2025; 162: 104770

- **Fair and explainable Myocardial Infarction (MI) prediction: Novel strategies for feature selection and class imbalance correction.** *Computers in biology and medicine*
  Akter, S. B., Akter, S., Tuli, M. D., Eisenberg, D., Lotvola, A., Islam, H., Fernandez, J. F., Huttemann, M., Pias, T. S.
  2025; 184: 109413

- **Methods and Benchmark for Detecting Cryptographic API Misuses in Python** *IEEE TRANSACTIONS ON SOFTWARE ENGINEERING*
  Frantz, M., Xiao, Y., Pias, T., Meng, N., Yao, D.
  2024; 50 (5): 1118-1129

- **Ensemble learning based transmission line fault classification using phasor measurement unit (PMU) data with explainable AI (XAI)** *PLOS ONE*
  Bin Akter, S., Pias, T., Deeba, S., Hossain, J., Rahman, H.
  2024; 19 (2): e0295144

- **Neuromarketing Techniques to Enhance Consumer Preference Prediction**
  Eisenberg, D., Pias, T., Fjermestad, J., Fresneda, J.
  edited by Bui, T. X.
  HICSS.2024: 923-932

- **M1M2: Deep-Learning-Based Real-Time Emotion Recognition from Neural Activity** *SENSORS*
  Akter, S., Prodhan, R., Pias, T., Eisenberg, D., Fernandez, J.
  2022; 22 (21)

- **Accuracy Improvement of Vehicle Recognition by Using Smart Device Sensors** *SENSORS*
  Pias, T., Eisenberg, D., Fernandez, J.
  2022; 22 (12)

- **On age prediction from facial images in presence of facial expressions** *INTERNATIONAL JOURNAL OF APPLIED PATTERN RECOGNITION*
  Shawon, M., Biswas, S., Arefin, N., Pias, T., Rahman, A.
  2021; 6 (4): 345-369

- **Human Attention Recognition with Machine Learning From Brain-EEG Signals**
  Hassan, R., Hasan, S., Hasan, M., Jamader, M., Eisenberg, D., Pias, T.
  edited by Meen, T. H.
  IEEE.2020: 16-19

- **Gender Recognition by Monitoring Walking Patterns via Smartwatch Sensors**

Pias, T., Kabir, R., Eisenberg, D., Ahmed, N., Islam, M.
edited by Meen, T. H.
IEEE.2019: 220-223

- **Vehicle Recognition Via Sensor Data From Smart Devices**
  Pias, T., Eisenberg, D., Islam, M.
  edited by Meen, T. H.
  IEEE.2019: 96-99

- **On the Performance Analysis of APIs Recognizing Emotions from Video Images of Facial Expressions**
  Bhattacharjee, A., Pias, T., Ahmad, M., Rahman, A.
  edited by Wani, M. A., Kantardzic, M., Sayedmouchaweh, M., Gama, J., Lughofer, E.
  IEEE.2018: 223-230