Md Shahriar Kabir

San Marcos, TX | cpi12@txstate.edu | Personal Portfolio | LinkedIn | Google Scholar | GitHub

Summary

- Ph.D. researcher specializing in **Generative AI and Diffusion Models for Healthcare**, with a focus on real-time fall detection and time-series data generation.
- Demonstrated impact through publications in *IEEE COMPSAC, Sensors*, and *IEEE PULSE*, contributing to advancing healthcare AI reliability.
- Recognized by **Texas State University** for Excellence in Research (2025) and Best Poster Award (2024).

Research Interest

- Generative AI and diffusion models for time-series data synthesis
- Healthcare AI applications in fall detection and sensor-based monitoring
- Time-series modeling, generation, and performance evaluation
- Deep learning and representation learning for sequential data

Education

Texas State University	Jan 2024 – Present
PhD in Computer Science	*San Marcos, Texas, USA*

- Supervisor: Dr. Anne Hee Hiong Ngu

Chittagong University of Engineering and Technology	Mar 2015 – Aug 2019
Bachelor of Science in Computer Science & Engineering	*Chittagong, Bangladesh*

Technical Skills

- **Programming:** Python, Java, C, MATLAB, SQL
- **Deep Learning:** PyTorch, TensorFlow, scikit-learn
- **Generative AI:** Diffusion Models (DDPM, DDIM), VAEs, GANs
- **Development Tools:** Spring Boot, REST APIs, Git, Docker

Publications

- **Kabir, Md Shahriar**, Sana Alamgeer, Minakshi Debnath, and Anne H. H. Ngu. "TransConv-DDPM: Enhanced Diffusion Model for Generating Time-Series Data in Healthcare." In *2025 IEEE 49th Annual Computers, Software, and Applications Conference (COMPSAC)*, pp. 866–875. IEEE, 2025.
- Debnath, Minakshi, Sana Alamgeer, **Md Shahriar Kabir**, and Anne H. Ngu. "Enhancing Wearable Fall Detection System via Synthetic Data." *Sensors* 25, no. 15 (2025): 4639.
- **Kabir, Md Shahriar**, and Anne H. H. Ngu. "TransConv-DDPM: Time-Series Data Generation With Diffusion." *IEEE PULSE* 16, no. 1 (2025): 29–31.
- Debnath, Minakshi, **Md Shahriar Kabir**, Jianyuan Ni, and Anne Hee Hiong Ngu. "The impact of synthetic data on fall detection application." In *International Conference on Artificial Intelligence in Medicine*, pp. 204–209. Cham: Springer Nature Switzerland, 2024.
- **Kabir, Md Shahriar**, and Mohammad Shamsul Arefin. "Google Play Store Data Mining and Analysis." *International Journal of Applied Information Systems* 12, no. 26 (2019): 1–5.

Talks & Presentations

- **Conference Presentation:** "TransConv-DDPM: Enhanced Diffusion Model for Generating Time-Series Data in Healthcare," *IEEE COMPSAC 2025*, Toronto, Canada.
- **Poster Presentation (Best Poster Award):** "TransConv-DDPM: Time-Series Data Generation With Diffusion", Texas State University, 2024.

Achievements

- **Excellence Award**, Texas State University (2025)
  Recognized for outstanding research performance during the 2024–2025 academic year.

- **Best Poster Award**, Texas State University (2024)
  Awarded for the best poster presentation at the IEEE EMBS Lone Star Section Workshop on AI and Healthcare 2024.

Experience

Teaching Assistant, Texas State University, San Marcos, TX — Aug 2025 – Present
- Assisted in teaching CS 2308: Foundations of Computer Science II.
- Guided students in intermediate programming concepts including Abstract Data Types (ADTs), sorting/searching algorithms, and object-oriented programming.

Teaching Assistant, Texas State University, San Marcos, TX — Jan 2025 – May 2025; Jan 2024 – May 2024
- Supported instruction for CS 1342: Programming for Scientists and Engineers.
- Assisted in lectures, labs, and grading covering algorithm development and programming applications in scientific computing.

Software Engineer, Midas Software Solutions Limited, Dhaka, Bangladesh — Jun 2022 – May 2023
- Designed and maintained backend systems using Spring Boot and REST APIs.
- Gained experience in software architecture and microservices—skills later applied to scalable AI system development.

Software Engineer, Nexkraft Limited, Dhaka, Bangladesh — Nov 2020 – Apr 2022
- Developed enterprise software using Java, Spring Framework, and AngularJS.
- Built a foundation in large-scale system design, supporting later work in AI-driven research.

References

- **Dr. Anne Hee Hiong Ngu**
  Professor, Department of Computer Science, Texas State University
  Email: angu@txstate.edu

- **Dr. Mohammad Shamsul Arefin**
  Professor, Department of Computer Science and Engineering, Chittagong University of Engineering and Technology
  Email: sarefin@cuet.ac.bd