Jishnu Banerjee
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Education

- **University of Texas at San Antonio** — San Antonio, TX
  PhD in Computer Science — *Aug. 2018 – Dec. 2024*
- **Shahjalal University of Science & Technology** — Sylhet, Bangladesh
  Bachelor of Computer Science & Engineering — *Jan. 2011 – August. 2015*

Honors & Achievements

- **Outstanding Graduate Teaching Assistant Award from UTSA GRAD School**: in 2023 for exemplary teaching at the undergraduate level.
- **Young Fellow Award**: in DAC 2021 & IGSC 2021.
- **Problemsetter & Judge**: at Inter-University Programming Contest, State University Bangladesh, 2016.
- **2nd Runner Up** : National Collegiate Programming Contest (NCPC), Daffodil University, 2014.
- **13th (University Rank 6th)**: International Collegiate Programming Contest (ICPC), North South University, 2013.
- **Champion** : Bangladesh Mathematical Olympiad, 2008, 2009 & 2010.

Experience

- **Texas State University** — San Marcos, TX
  Assistant Professor of Instruction — *Jan 2025 - Present*
  - **Teaching:** As an instructor, taught five different undergraduate level courses across 3 semesters. The courses are "CS 3358 Data Structures & Algorithms"(Spring 2025, Fall 2025, Spring 2026), "CS 4318 Compiler Constructions"(Spring 2025) , "CS 3339 Computer Architecture"(Fall 2025), "CS 2315 Computer Ethics"(Fall 2025) and "CS 3320 Internet Software Development"(Spring 2026). Received an average overall rating of 4.09/5 in student evaluation.

- **University of Texas at San Antonio** — San Antonio, TX
  Graduate Teaching Assistant — *Aug 2018 - Dec 2024*
  - **Teaching:** As an instructor, taught the undergraduate level course "Computer Programming with Engineering Application" in Fall 2021 & Spring 2022. Received an average overall rating of 4.39/5 in student evaluation.
  - **Recitation:** Conducted lab sessions of courses including Intro to CS II, Data Structures & Algorithms.
  - **Teaching Assistantship:** Assisted instructors in graduate and undergraduate level courses, including Analysis of Algorithms, Data Structures, Operating Systems, Artificial Intelligence, and many others.
  - **Tutoring:** Tutored undergraduate students with their projects and assignments related to courses like Programming Languages, Data Structures, Algorithms, Machine Learning, Artificial Intelligence, and Many Others.

- **IPVision Canada Inc.** — Dhaka, Bangladesh
  Software Engineer — *Sep 2015 - Nov 2017*
  - **Application Cache:** Implemented cache mechanism for cloud-based infrastructure that reduces the image loading time by more than 60%.
  - **Cloud SDK:** Worked to develop an SDK responsible for uploading and downloading Images and Videos.
  - **R&D:** on Distributed Cloud Storage and Caching mechanism which helped to implement the systems in running development platform.

Skills & Competence

- **Languages**: C/C++, Python, MATLAB, JAVA, MySQL.
- **Teaching**: Programming Language, Discrete Mathematics, Advanced Algorithms, Data Structures.
- **Technologies**: Battery-less Embedded Systems, Energy Harvesting, Machine Learning, Deep Neural Network.
- **Data Science & Machine Learning**: Numpy, Pandas, Pytorch.
- **Other**: Bash & Shell Scripting, Git, Linux.

Publications

- **Memory-aware Efficient Deep Learning Mechanism for IoT Devices**: *J Banerjee*, S Islam, W Wei, C Pan, D Zhu, M Xie. Published on the 32nd IEEE International Conference on Application-specific Systems, Architectures and Processors(ASAP), 2021
- **Autotile: Autonomous Task-tiling for Deep Inference on Battery-less Embedded System**: *J Banerjee*, S Islam, W Wei, C Pan, M Xie. Published on 34th ACM Great Lakes Symposium on VLSI(GLSVLSI), 2024
- **Energy-Aware Incremental OTA Update for Flash-based Batteryless IoT Devices**: W Wei, *J Banerjee*, S Islam, C Pan, M Xie. Accepted on IEEE Computer Society Annual Symposium on VLSI(ISVLSI), 2024
- **An Intermittent OTA Approach to Update the DL Weights on Energy Harvesting Devices**: W Wei, S Islam, *J Banerjee*, S Zhou, C Pan, C Ding, M Xie. Published on the 23rd International Symposium on Quality Electronic Design(ISQED), 2022
- **Intermittent OTA Code Update Framework for Tiny Energy Harvesting Devices**: W Wei, S Islam, *J Banerjee*, S Palanisamy, C Pan, M Xie. Accepted on IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems(TCAD), 2024
- **Energy-Adaptive Checkpoint-Free Intermittent Inference for Low Power Energy Harvesting Systems**: S Islam, W Wei, *J Banerjee*, C Pan. Accepted on the 26th International Symposium on Quality Electronic Design (ISQED), 2025

Projects

- **Battery-less Cost Simulator**: Built a custom simulator to calculate important performance metrics for battery-less embedded system devices. Being compatible with different scenarios, it was used in 3 different projects that led to published works. (2021) **Language: C++.**
- **Decaf 19 Compiler**: Built a compiler for the Decaf 19 programming language, which successfully does the lexical analysis, expression handling and loop evaluations. (2019) **Language: C++.**
- **Embedded Thermometer**: Implemented temperature detection in Texas Instruments MSP430FR6989 LaunchPad, which can detect temperatures and report the recent temperatures whenever asked. Additionally implemented scheduling algorithms and semaphores. (2020) **Language: C.**
- **Minesweeper**: Implemented an automated minesweeper player, which has more than 85% success rate depending on the difficulty and the board size. (2020) **Language: Python.**
- **Student Attendance System**: Automatic attendance system using student's unique ID and fingerprint with the help of student database. (2013) **Language: JAVA & MySQL.**
- **Query AutoComplete**: Automatic completion of search results and providing intelligent suggestions using the previous search results for the Bengali language. (2014) **Language: JAVA.**

Volunteer Experiences

- **GLSVLSI 2024:** Volunteered for multiple technical sessions and overall conference.
- **CPS IoT Week 2023:** Provided technical support during different sessions and overall conference.
- **Aney Computational Math Club**: Conducted at least 20 training sessions on different topics, including discrete mathematics and advanced algorithms. (2012-2014).
- **Bangladesh Mathematical Olympiad**: Conducted training sessions on different mathematical topics and frequently contributed with new and innovative mathematical problems for arranging national olympiad tests as an active academic team member. (2011-2015).