FARIHA TABASSUM ISLAM

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EDUCATION

Bangladesh University of Engineering & Technology (BUET)
Master of Science, Computer Science & Engineering   *Jun 2021*
  CGPA 3.92 out of 4.00
  Thesis: A Privacy-enhanced Approach for Planning Safe Routes with Crowdsourced Data and Computation

Bangladesh University of Engineering & Technology (BUET)
Bachelor of Science, Computer Science & Engineering   *Oct 2018*
  CGPA 3.89 out of 4.00 (11th out of 126)
  Thesis: An Efficient Approach for Real-Time Crowdsourced Package Delivery using Public Transport Networks

WORK EXPERIENCE   Feb 2019 - now (4 years)

Lecturer   *Feb 2019 - Present*
Dept. of Computer Science & Engineering, United International University
Part-time Research Assistant   *Jan 2022 - Jun 2022*
Dept. of Computer Science & Engineering, Bangladesh University of Engineering & Technology
High Profile ICT Scholar Fellow   *Jun 2019 - Jun 2020*
ICT Division, Govt. of Bangladesh

PUBLICATION

A Privacy-Enhanced and Personalized Safe Route Planner with Crowdsourced Data and Computation
Fariha Tabassum Islam, Tanzima Hashem, Rifat Shahriyar
ICDE 2021 (CORE Rank **A***), DOI 10.1109/ICDE51399.2021.00027   [Full research paper] [Presenter]
MTUL: A Novel Approach for Multi-Trajectory User Linking
Fariha Tabassum Islam, Md. Tareq Mahmood, Mahmuda Naznin
NSysS 2022, Acceptance Rate 27%   [Full research paper]

PREPRINT

**A Crowd-enabled Solution for Privacy-Preserving and Personalized Safe Route Planning for Fixed or Flexible
Destinations (Full Version)**
Fariha Tabassum Islam, Tanzima Hashem, Rifat Shahriyar
arXiv:2112.13760, *currently under minor revision in TKDE*

FELLOWSHIP

High Profile ICT Scholar Fellowship, ICT Division, Govt. of Bangladesh | *BDT 2.4 Million*   *2019*
  Supported Fariha for her Master's thesis

RESEARCH EXPERIENCE   Sep 2017 - now (5 years)

Safe route planner | *Master's thesis, published in ICDE2021, extension under minor revision in TKDE*   *2019-2022*
  Computes safe routes for fixed or flexible destinations for a user or group using crowd data while preserving privacy.
  Worked on designing the system architecture and two efficient algorithms; analyzed, visualized and prepared data
  using `Python` (`Pandas`, `OSM`); simulated the full system and wrote *all* experiments using `Java` and developed an
  `Android` prototype using `SparkJava` and `Firebase` for data sharing. (∼35K lines of code)
Crowdsourced package delivery in public transport network | *Undergrad thesis*   *2017-2019*
  Computes package delivery routes in a public transport network that match commuters' pre-planned journeys.
  Worked on designing efficient algorithms; analyzed, visualized and prepared data using `PostgreSQL`, `Python` and `R`
  from a large dataset (330M rows); and wrote *all* experiments using `Java`. (∼20K lines of code)
Dissimilar route finding | *Manuscript under revision in JOSIS*   *2022*
  Finds a set of most dissimilar routes from sets of representative routes for different features
  Implemented parts of experiment codes in `C++` and `Python` and worked on the revision phase.
Trajectory user linking | *Master's course project, accepted in NSysS 2022*   *2020*
  Identifies a user from his/her multiple available trajectories using GRU autoencoder
  Worked on problem formulation, data preparation using `Python`, partial implementation using `PyTorch`, and writing.
Mobile image analysis in healthcare | *A survey manuscript under preparation*   *2020 - 2022*
  Uses smartphone images and sensors for screening various diseases
  Collaborated in writing a grant proposal and a survey paper.

SKILLS

`Java`, `Python` (Scikit-learn, NumPy, SciPy, Keras basics, PyTorch basics, Selenium), `C++`, `SQL`, `Android` app development, `Git` — used for research experiments, data analysis, course projects during undergrad and master's, and teaching.

AWARDS & SERVICES

· First runner-up group | Hackathon for Women 2017 (36 hours) by ICT Division, Govt. of Bangladesh

· First runner-up group | Women's Day Innovation Challenge 2017, Facebook Developer Circle, Dhaka

· University Merit | BUET - 2015, 2017

· Dean's Honor List | BUET - 2015-18

Reviewer. WISE (2021, 2022), NSysS (2020, 2021), APWeb-WAIM (2019)

NOTABLE TEACHING EXPERIENCES

Undergraduate Courses:

Theory. Object Oriented Programming, Data Structure and Algorithms I & II, Artificial Intelligence, Compiler.

Lab. Introduction to Computer Systems, Structured Programming Language, Data Structure and Algorithms II, Artificial Intelligence, Pattern Recognition, System Analysis and Design, Software Engineering, Compiler