

Sefat E Rahman

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SUMMARY OF QUALIFICATION

- Research experience in the field of **Interactive Data Visualization, Topological Data Analysis, Machine Learning**.
- Teaching experience of various courses of Computer Science: Lecturer/Instructor (Undergrad) + TA (Graduate and Undergrad)
- Working experience of student advising.

EDUCATION

The University of Utah <i>Doctor of Philosophy, Computer Science and Engineering</i>	Salt Lake City, UT <i>Jan. 2023 – Dec 2025 exp.</i>
University of South Florida <i>Master's of Science, Computer Science and Engineering</i>	Tampa, FL <i>Jan. 2021 – Dec. 2022</i>
Khulna University of Engineering and Technology <i>Bachelor of Science, Computer Science and Engineering</i>	Khulna, Bangladesh <i>Dec. 2013 – Feb. 2018</i>

EXPERIENCE

Graduate Research Assistant <i>The University of Utah</i>	Jan 2023 – Aug 2023, Jan 2024 – Present <i>Salt Lake City, UT</i>
<ul style="list-style-type: none">• Working on a research project named "Drawing the layout of the Reeb Graph" funded by NSF• Working on a research project named "Same stats different topology"• Collaborating on a research project to identify human emotion by using the technique of Topological Data Analysis	
Graduate Teaching Assistant <i>The University of Utah</i>	Sep. 2023 – Dec 2023 <i>Salt Lake City, UT</i>
<ul style="list-style-type: none">• Helped the instructor of the "Vis for Data Science" course• Taught "Text Visualization" to the students of the "Vis for Data Science" course	
Graduate Teaching Assistant <i>University of South Florida</i>	Jan. 2021 – Dec 2022 <i>Tampa, FL</i>
<ul style="list-style-type: none">• Worked as the primary instructor of several laboratory courses - Computer Architecture Lab, Computer Design Lab.• Helped the instructors of several courses - Computer Design, System Integration and Architecture for IT, Cloud Computing, Programming Concept	
Lecturer <i>Eastern University</i>	Jul. 2018 – Dec 2020 <i>Dhaka, Bangladesh</i>
<ul style="list-style-type: none">• Instructor of several undergraduate courses like DBMS, Compiler Design, Theory of Computation, Machine Learning• Worked as advisor of students for some projects	
Intern <i>IPVision Inc Canada</i>	June 2016 - July 2016 <i>Dhaka, Bangladesh</i>
<ul style="list-style-type: none">• Worked with the 'Big Data' team to get insight into how data collected from Social Media are utilized.• Worked with the QA team for cross-platform validation of a Social Media named "ringID"	

PEER REVIEWED PUBLICATION

C1 Sefat E Rahman, Shofi Ullah, "Email Spam Detection using Bidirectional Long Short Term Memory with Convolutional Neural Network", 2020, IEEE Region 10 Symposium (TENSYP).

CURRENT RESEARCH PROJECTS

Effectively Drawing the Reeb Graph of Models on different layouts

August 2022 – Present

- **This project is funded by NSF**
- Developing the layouts to draw Reeb Graph of 3D object models on 2D and 3D layouts
- **Reeb Graph has been applied to the fields of Medical Imaging, Scientific Data Visualization, Molecular Biology**

Same Stats Different Topology

May 2023 – Present

- Manuscript is ready and under revision by ACM CHI conference (One of the most prestigious conferences in the field of Human-Computer interaction)
- A tool is developed to distinguish the datasets with similar statistical properties by using topological data analysis
- This tool will help people to understand datasets from the perspective of Topological Data Analysis, which is now one of the growing research fields in the field of Data Science

Using Topological Data Analysis to effectively detect human emotion

August 2022 – Present

- Analysing a Working Machine Learning Model to understand how it detects human emotion from time series data using the tool of Topological Data Analysis
- This project will help the Data Scientists to understand how popular Machine Learning model works

ACADEMIC/SIGNIFICANT PROJECTS

- **Real-time Dashboard for Deep Learning Metric Visualization** : An interactive platform to check the training inferences of the Deep Learning Model's metrics in real time.
- **Classify emotion from Physiological Data**: Designed LSTM Network to classify emotions from time series data accurately.
- **Emergency Help Alert**: An Android app helps its user to ask for help from nearby Police Stations, Fire services, and Hospitals.
- **Copier with Schedule Shutdown**: A desktop application that allows its user to leave the computer to automatically shut down after a series of copying files, also provides the facility to copy from multiple directories at a time efficiently.
- **Voice Controlled Home Appliance**: Using a Mobile phone, voice commands can be given to turn on/off various electric devices from a distance.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL , HTML/CSS

Developer Tools: Git, VS Code, Visual Studio, PyCharm, Eclipse

Machine Learning and Data Analysis Too: Scikit-learn, Tensorflow, MATLAB, D3.js

AWARDS

- Dean's award 2015-16 and 2016-17 session. (KUET, Khulna)
- Intra KUET Programming contest (Position-5th) (KUET, Khulna)
- Junior (2009), Secondary (2011), Higher Secondary (2013) board scholarship on Merit