

# Shishir Roy

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## CONTACT INFORMATION

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## RESEARCH INTEREST

**Natural Language Processing, Knowledge Extraction, Machine Learning**

## EDUCATION

**Shahjalal University of Science and Technology, Sylhet** Jan 2016 - Feb 2020  
Bachelor of Science (Engineering)  
Major: Computer Science and Engineering  
CGPA: 3.60/4.00

## RESEARCH EXPERIENCE

**Natural Language Processing Lab, SUST**  
**Advisor:** Md. Saiful Islam, Ms Marium-E-Jannat Jan 2019 - Feb. 2020

- Experimented with different BiLSTM and attention based models to multi-task efficiently, making the architecture more adaptable to transfer learning and meta learning techniques to generalize across different new related natural language processing tasks.
- Incorporated Bidirectional Encoder Representations from Transformers (BERT) language model with decaNLP for better understanding of underlying semantic relations.
- Reviewed literature on Question Answering (QA) techniques, paradigms and systems as well as the metrics and indicators used to measure these approaches for QA systems.
- Augmented BERT with CNN for text-based multiple choice question answering for semantic relations understanding, and compared the results with LSTM based models.
- Analysed multi-layer recurrent neural network based machine comprehension model to detect answers of open domain questions in Wikipedia documents.

## PUBLICATIONS

**Multitask Learning as Question Answering with BERT**  
**Shishir Roy**, Nayeem Ehtesham, Md. Saiful Islam.  
*24th International Conference on Computer and Information Technology (ICCIT). IEEE, 2021.*

**Augmenting BERT with CNN for Multiple Choice Question Answering**  
**Shishir Roy**, Nayeem Ehtesham, Md. Saiful Islam.  
*24th International Conference on Computer and Information Technology (ICCIT). IEEE, 2021.*

## POSTER PRESENTATION

**Open Domain Question Answering Using Wikipedia As Knowledge Base**  
**Shishir Roy**, Nayeem Ehtesham, Md. Saiful Islam.  
*2nd International Conference on Bangla Speech and Language Processing (ICBSLP). IEEE, 2019.*

## TECHNICAL SKILLS

**Programming Languages:** Python, Java, C#  
**Libraries:** Pytorch, Scikit-learn, Keras  
**Tools/Framework:** Docker, Elasticsearch, LoopBack

## RELEVANT COURSES

- Machine Learning
- Artificial Intelligence
- Introduction to Data Science
- Stanford CS224N: NLP with Deep Learning
- Introduction to Computer Security
- Computer Networking

<b>INDUSTRY EXPERIENCE</b>	<b>Samsung Research and Development Institute (SRBD) Software Engineer</b>	<b>Dhaka March 2020 - Present</b>
	<ul style="list-style-type: none"> <li>• Implemented a new parser to efficiently parse binary logs related to debugging information using the DWARF symbol table from binaries in the baseband station.</li> <li>• Integrated thread safe in-memory concurrent LRU (Least Recently Used) cache for parsed logs that enhanced performance of the application by 20%. (.NET, C#)</li> <li>• Reengineered all log parsing APIs to reduce completely parsing multiple times that improved performance by 30%.</li> <li>• Developed UI related key business features using Telerik that resulted in smoother workflow for the users. (Telerik)</li> <li>• Analyzed and resolved issues related to home tab in Samsung galaxy wearable (Galaxy Watch3) application which is downloaded more than 500M times. (Java, Android)</li> <li>• Collaborated with a team of 5 members and delivered several presentations to over 30 people among project members.</li> </ul>	
	<b>Pipilika Software Development Engineer Intern</b>	<b>Sylhet Sept. 2019 - Feb. 2020</b>
	<ul style="list-style-type: none"> <li>• Built and deployed a media monitoring system using Django, Elasticsearch, and Docker that aggregates news from comprehensive news publishers. (Docker, Redis)</li> <li>• Reengineered different RESTful APIs to reduce the number of open connections that fueled improvements to efficiency by reducing latency by 30%. (Django)</li> <li>• Optimized auto-complete suggestion and searching by boosting several fields which resulted in improving accuracy by 10%.</li> </ul>	
<b>PROJECTS</b>	<b>ShoppingKori</b>	<b>Jan. 2019 - Jun. 2019</b>
	<ul style="list-style-type: none"> <li>• Developed a full-stack CRUD web application which offers an online shopping platform for vendors as well as customers for selling and buying Bengali Products.</li> <li>• Implemented RESTful APIs using LoopBack framework for communicating among three different organizations: Bank, E-commerce, and Vendor. (LoopBack)</li> <li>• Designed MongoDB database schema to store, manipulate, and search product information while preserving memory efficiency. (MongoDB)</li> </ul>	
	<b>Star Gazer</b>	<b>Jan. 2018 - Jun. 2018</b>
	<ul style="list-style-type: none"> <li>• Built and designed a VR mobile application that shows the constellations in their forms with little details of them. (C#, Unity)</li> <li>• Organized the different stars related to a constellation according to their positions.</li> <li>• Added 2d videos and images which give a short description about stars and galaxies.</li> </ul>	
<b>ACHIEVEMENTS</b>	<ul style="list-style-type: none"> <li>• Awarded as "SWC Professional" in Software certification test, 2021 by Samsung Electronics on global standard.</li> <li>• Ranked around top 20% amongst all participants in the <i>ACM ICPC</i> (International Collegiate Programming Contest) Dhaka Site, 2017.</li> </ul>	
<b>ADDITIONAL ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Participated in various inter-university programming contests including the National Collegiate Programming Contest (<i>NCPC</i>), 2018.</li> <li>• Solved more than 700 programming problems at different Online Judges like UVA, Codeforces, Spoj, etc. (Handle: shishir_roy)</li> </ul>	