Shishir Roy

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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

INDUSTRY EXPERIENCE	**Samsung Research and Development Institute (SRBD)** **Dhaka** **Software Engineer** **March 2020 - Present**

- Implemented a new parser to efficiently parse binary logs related to debugging information using the DWARF symbol table from binaries in the baseband station.
- Integrated thread safe in-memory concurrent LRU (Least Recently Used) cache for parsed logs that enhanced performance of the application by 20%. (.NET, C#)
- Reengineered all log parsing APIs to reduce completely parsing multiple times that improved performance by 30%.
- Developed UI related key business features using Telerik that resulted in smoother workflow for the users. (Telerik)
- Analyzed and resolved issues related to home tab in Samsung galaxy wearable (Galaxy Watch3) application which is downloaded more than 500M times. (Java, Android)
- Collaborated with a team of 5 members and delivered several presentations to over 30 people among project members.

Pipilika   **Sylhet**
Software Development Engineer Intern   **Sept. 2019 - Feb. 2020**

- Built and deployed a media monitoring system using Django, ElasticSearch, and Docker that aggregates news from comprehensive news publishers. (Docker, Redis)
- Reengineered different RESTful APIs to reduce the number of open connections that fueled improvements to efficiency by reducing latency by 30%. (Django)
- Optimized auto-complete suggestion and searching by boosting several fields which resulted in improving accuracy by 10%.

PROJECTS	**ShoppingKori** **Jan. 2019 - Jun. 2019**

- 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.
- Implemented RESTful APIs using LoopBack framework for communicating among three different organizations: Bank, E-commerce, and Vendor. (LoopBack)
- Designed MongoDB database schema to store, manipulate, and search product information while preserving memory efficiency. (MongoDB)

Star Gazer   **Jan. 2018 - Jun. 2018**

- Built and designed a VR mobile application that shows the constellations in their forms with little details of them. (C#, Unity)
- Organized the different stars related to a constellation according to their positions.
- Added 2d videos and images which give a short description about stars and galaxies.

ACHIEVEMENTS	• Awarded as "**SWC Professional**" in Software certification test, 2021 by Samsung Electronics on global standard.

- Ranked around top 20% amongst all participants in the *ACM ICPC* (International Collegiate Programming Contest) Dhaka Site, 2017.

ADDITIONAL ACTIVITIES	• Participated in various inter-university programming contests including the National Collegiate Programming Contest (*NCPC*), 2018.

- Solved more than 700 programming problems at different Online Judges like UVA, Codeforces, Spoj, etc. (Handle: shishir_roy)