Nafiz Sadman

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62 Old Oak Road, Kingston, Ontario, K7M 6X3

PROFESSIONAL SUMMARY

Experienced professional with a research interest in bio-inspired immune and optimized artificial intelligent systems, trustworthy and secure artificial intelligence, scalable decentralized reinforcement learning, speech recognition models, object detection, bias in knowledge representations in NLP, and NLP in medical applications. Strong background in research and a passion for innovation, with a focus on the convergence of AI and cyber security.

ACADEMICS

MSc. School of Computing Sep 2022 - Present
Queen's University • Kingston, Ontario

- **Specialization: NSERC CREATE Cybersecurity.**
- **CGPA: 4.20 (In scale of 4.30)**

BSc. Computer Science & Engineering Jan 2016 - Aug 2019
Independent University • Bangladesh

- Major: Computer Science & Engineering
- Minor: Management Information Systems
- CGPA: 3.82 (In scale of 4.00)
- **Thesis: Intrinsic Evaluation of Bengali Word Embeddings (Published in 2019 International Conference on Bangla Speech and Language Processing (ICBSLP))**

ACHIEVEMENTS

Best Paper Award - IEMCON 2020 (NLP) 2020

IEMCON 2020 Best Paper Award in the NLP Domain for the paper titled ***"CAN NLP TECHNIQUES BE UTLIZIED AS A RELIABLE TOOL FOR MEDICAL SCIENCE?" – BUILDING A NLP FRAMEWORK TO CLASSIFY MEDICAL REPORTS***

MAGNA CUM LAUDE (BSc) 2019

Honored Magna Cum Laude for Academic Performance in Bachelors achieving a high CGPA.

Vice Chancellors and Dean Awards 2019

Honored with Vice Chancellors and Deans Awards for academic performance.

PROFESSIONAL EXPERIENCE

Research Intern Oct 2022 - Feb 2023
Pfizer Canada (with MITACS) • Kingston, Ontario

Extract, transform, and analyze Electronic Health Records to understand patient clinical characteristics, demographics, and comorbidities.

- Extraction and Transformation using Pandas, mySQL, numpy, sklearn.
- Analysis with Pandas and visualization with seaborn.
- Statistical prediction with k-means clustering and logistic regression.

Graduate Research Assistant Sep 2022 - Present
BAMLab, Queen's University • Kingston, Ontario

- Develop automated analytics tools for medical diagnosis applications. This includes automated querying of multiple structured and unstructured data sources.
- Create a multilayer authentication system to protect user privacy on the web.

Machine Learning Engineer Aug 2019 - Jul 2022
Silicon Orchard Ltd • Dhaka, Bangladesh

- Built an internal data analytics tool based on text data using NLP techniques.
- Worked on Multi-module (NLP-CV) driven bio-informatics applications.
- Built an HR Analytics tool to extract relevant potential CEO Candidates for a Silicon Valley HR Company using BERT.
- Stylometric Analysis of Authorship Attribution.
- Data Mining and Information Extraction.
- Developing Deep Reinforcement Learning Algorithms.
- Team Management.
- Software development and ML production in Django.

SKILLS

- Statistical Learning and Deep Learning in Pytorch and Tensorflow - NLP, CV.
- Statistical Python programming with Pandas, Dask, and Seaborn.
- Data Analytics with Pandas, Seaborn, Tableau, PowerBI, and Excel.
- Database management with MongoDB.
- Prototype development to serve ML and DL applications in Django (with HTML, CSS3, JS).
- Fluent communication and management skills.

CERTIFICATIONS AND CREDENTIALS

- Deep Learning Certification by DeepLearning.AI
- TensorFlow in Practice Certification by DeepLearning.AI
- Cyber Challenge 2023 by DOF - U.S.A.

PUBLICATIONS

- **Sadman, N.**, Sadmanee, A., Gupta, K. D., & George, R. (2022, December). **HeteroGenius: An Improvised 'Intelligence'in Heterogeneous Graph Transformers**. In 2022 21st IEEE International Conference on Machine Learning and Applications (**ICMLA**) (pp. 849-854). IEEE.
- **Sadman, N.**, Ahsan, M. M., Rahman, A., Siddique, Z., & Gupta, K. D. (2022). **Promise of AI in DeFi, a Systematic Review**. **Digital**, 2(1), 88-103.
- Khan, M. A., **Sadman, N.**, Gupta, K. D., & Ovi, J. A. (2022, January). **Interpretable Learning Model for Lower Dimensional Feature Space: A Case study with Brown Spot Detection in Rice Leaf**. In 2022 IEEE 12th Annual Computing and Communication Workshop and Conference (**CCWC**) (pp. 0428-0434). IEEE.
- **Sadman, N.**, Rahman, M. H., Tasneem, S., Haque, M. A., & Gupta, K. D. (2021, January). **Recommend Speciality Doctor from Health Transcription: Ensemble Machine Learning Approach**. In 2021 IEEE 11th Annual Computing and Communication Workshop and Conference (**CCWC**) (pp. 0967-0972). IEEE.
- **Sadman, N.**, Anjum, N., Gupta, K. D., & Mahmud, M. P. (2021, January). **Understanding the pandemic through mining covid news using natural language processing**. In 2021 IEEE 11th Annual Computing and Communication Workshop and Conference (**CCWC**) (pp. 0362-0367). IEEE.
- **Sadman, N.**, Tasneem, S., Haque, A., Islam, M. M., Ahsan, M. M., & Gupta, K. D. (2020, November). "**Can nlp techniques be utilized as a reliable tool for medical science?"-building a nlp framework to classify medical reports**. In 2020 11th IEEE Annual Information Technology, Electronics and Mobile Communication Conference (**IEMCON**) (pp. 0159-0166). IEEE. **** BEST PAPER AWARD***
- **Sadman, N.**, Ahsan, M. M., & Mahmud, M. P. (2020, October). **ADCR: An Adaptive Tool to select" Appropriate Developer for Code Review" based on Code Context**. In 2020 11th IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (**UEMCON**) (pp. 0583-0591). IEEE.
- **Sadman, N.**, Gupta, K. D., Haque, M. A., Sen, S., & Poudyal, S. (2020, June). **Stylometry as a reliable method for fallback authentication**. In 2020 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (**ECTI-CON**) (pp. 660-664). IEEE.
- **Sadman, N.**, Gupta, K. D., Haque, A., Poudyal, S., & Sen, S. (2020, February). **Detect review manipulation by leveraging reviewer historical stylometrics in amazon, yelp, facebook and google reviews**. In Proceedings of the 2020 The 6th International Conference on E-Business and Applications (**ICEBA**) (pp. 42-47).
- **Sadman, N.**, Sadmanee, A., Tanveer, M. I., Amin, M. A., & Ali, A. A. (2019, September). **Intrinsic evaluation of bangla word embeddings**. In 2019 International Conference on Bangla Speech and Language Processing (**ICBSLP**) (pp. 1-5). IEEE.

RESEARCH PROJECTS

Secure Multiparty Computation for MIMIC III

- **About:** Toy experiments on MIMIC III Demo dataset using SMC. This a toy experiment for CISC870 (Cryptography) at Queen's University, Kingston, ON, Canada. **Github:** https://github.com/Nafiz95/SecureMPC_MIMIC_Dem
  Tech Stack: PyMPC

Medical Specialty Detector

- **About:** Detect the specialty of the department referred to the patient on their problem description.
  Paper: *Sadman, N., Rahman, M. H., Tasneem, S., Haque, M. A., & Gupta, K. D. (2021, January). Recommend Speciality Doctor from Health Transcription: Ensemble Machine Learning Approach. In 2021 IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC) (pp. 0967-0972). IEEE.*
  Github: https://github.com/Nafiz95/Medical_Speciality_Detector
  Tech Stack: Deep Keras - BiLSTM, ScikitLearn

Review Verification System

- **About:** Detect the probability of Bot / Paid / Authentic reviews posted on Facebook, Google, and Yelp
  Paper: *Sadman, N., Gupta, K. D., Haque, A., Poudyal, S., & Sen, S. (2020, February). Detect review manipulation by leveraging reviewer historical stylometrics in amazon, yelp, facebook and google reviews. In Proceedings of the 2020 The 6th International Conference on E-Business and Applications (pp. 42-47).*
  Github: https://github.com/Nafiz95/fake_product_review_check
  Tech Stack: NLTK, Numpy, Pandas, Beautifulsoup4, Requests, Vader Sentiment Analysis, DJano, RegEx

REFERENCES

Dr. Farhana Zulkernine, PhD, PEng

- Associate Professor, School of Computing - Queen's University, Ontario, Canada
- farhana.zulkernine@queensu.ca

Dr. Furkan Alaca, PhD

- Assistant Professor - School of Computing - Queen's University, Ontario, Canada
- furkan.alaca@queensu.ca

Dr. Kishor Datta Gupta, PhD

- Assistant Professor - School of Physical Sciences - Clark Atlanta University, Georgia, U.S.A.
- Co-CEO: Silicon Orchard Ltd, Bangladesh
- kgupta@cau.edu