SHUTONU MITRA

Falls Church, VA |(929) 682-7538 |Email: mshutonu@vt.edu| LinkedIn: in/shutonu-mitra | Portfolio: sm5190.github.io

Education

Virginia Tech | Virginia, USA   *August 2023 – May 2025*
Master of Engineering in Computer Science; GPA: 3.90/4.00   Courses: Machine Learning, ML with Big Data, Cloud Computing

Military Institute of Science & Technology | Bangladesh   *February 2018 – May 2022*
Bachelor of Science in Computer Science; CGPA: 3.65/4.00

Experience

Selise Digital Platform   *December 2022– March 2023*
Data Analytics Engineer Internship   Dhaka, Bangladesh

- Implemented and optimized SQL and NoSQL databases, achieving a 35% performance enhancement through query tuning.
- Automated ETL processes and collaborated on troubleshooting, resulting in a 40% reduction in data pipeline defects.
- Engineered machine learning models, executed intricate data analyses, and produced comprehensive reports.

Military Institute of Science & Technology   *December 2021– February 2023*
Undergraduate Research Assistant   Dhaka, Bangladesh

- **ML & AI-based research works** Applied ML algorithms to infer health (e.g. physiological indicators), behaviours (e.g., conversation), and spatiotemporal contexts from wearable and mobile sensors.
- **User Experience-based research works:** Supervised and conducted evaluation studies to evaluate the performance and usability of the developed systems by collecting and analyzing both quantitative and qualitative data.
- **Designing and Developing Tools and Applications:** Designed and developed Android and Web applications for collecting, cleaning, predictive modelling, and visualizing data.

Teletalk Bangladesh LTD.   *February 2021–April 2021*
Engineer Intern   Dhaka, Bangladesh

- Optimized performance and efficiency across the organization by streamlining operations utilizing practical expertise in Server System Administration, Cloud Infrastructure, and Virtualization.
- Managed the company's ERP software and a suite of services including IVR support and the publication of exam results for Civil Services, SSC, and HSC, ensuring efficient and reliable service delivery.

Publications

[1] "A Framework to Detect and Prevent Cyberbullying from Social Media by Exploring Machine Learning Algorithms." International Conference on Computer, Communication, Chemical, Materials and Electronic Engineering (IC4ME2) (2021)

[2] "Predictis: an IoT and machine learning-based system to predict the risk level of cardiovascular diseases." BMC Health Serv Res 23, 171 (2023).

Projects

Malicious UPL Detection | Tensorflow, Pytorch, NLP, Neural Networks   *Git Repository*

- Architected a real-time malicious URL detection system to block phishing, malware, and defacement URLs that lead to malicious websites causing cyber threats by the proposed Convolutional neural network model with an F1 score of 97.67%.

Predictis | Machine Learning, IoT, Android, Cloud   *Git Repository*

- Created and validated an android application that predicts its user's future possibility of having Cardiovascular diseases using an ML model built on real-time data from biomedical sensors, improving utility and user satisfaction by 25%.

PPD Coach| Android, Graphic Design, Chatbot   *Git Repository*

- Invented an innovative Android application, designing chatbot and multimodal screening techniques, to detect Postpartum Depression (PPD) in Bangladeshi mothers, which demonstrated about 80.8% improvement in PPD screening.

Papertown | React, CSS, TypeScript, Restful API, MySQL, JDBC, Tomcat   *Git Repository, View Site*

- Implemented a bookstore web application featuring a React client with a single-page architecture, a Tomcat server, and a MySQL database, emphasizing accessibility, performance, and scalability considerations.

Twitter Opinion Mining | Tensorflow, NLP, Information Retrieval   *Git Repository*

- Devised a sentiment analyzer with Bi-LSTM Recurrent Neural Network with an accuracy of 85% to reflect public opinion related to mental through time-series analysis from self-annotated data collected using public Twitter API.

Skills

Languages: Java, Python, C, C++, JavaScript, PHP, SQL, HTML 5, CSS 3, Bash.
Analytic Skill: Data visualization (Tableau, Python), Machine Learning, Neural Networks (Tensorflow, PyTorch), Natural Language Processing, IBM cloud, AWS cloud.
Technologies: Android, Django, MySQL, Firebase, Git, Oracle, Latex, Figma, Open GL, MongoDB, React, Node JS, Rest API.