FAHMIDA PERVIN BRISHTY

340 Assiniboine Road, Apt. 1405, North York, Toronto, Canada.
fahmida@eecs.yorku.ca, http://eecs.lassonde.yorku.ca/
+4168570278, Linkedin-www.linkedin.com/in/fahmidabrishty, Github-https://github.com/fahmida185/

Summary

Data Scientist with strong computational background and 3+ years of experience using predictive modeling, data processing, database management, and data mining algorithms to solve challenging business problems. Involved in the Python open-source community and passionate about vison, deep reinforcement learning as an M.A.Sc Graduate Research Assistant at York University, EAM Lab.

My research interest includes Machine Learning, Deep Learning, Image Processing, Information Retrieval, Data Mining, and Pattern Recognition Driven Material design. Careers in the data science field are not only concentration, but also I find it very exciting and rewarding. Before starting my M.Sc.at York, I worked as an Executive Engineer at Renata Limited, Bangladesh.

EDUCATION

Masters of Applied Science, Electrical Engineering and Computer Science (EECS) (Graduating August 2020)

York University
CGPA: 3.90/4.00, Address: Toronto, Canada.
THESIS - Learning-based Electronics Manufacturing.

Masters of Science, Institute of Information Communication Technology(IICT)
Bangladesh University of Engineering and Technology(BUET)
CGPA: 3.77/4.00, Address: Dhaka, Bangladesh.
THESIS - Machine learning approach to disease identification.

Bachelor of Science, Electrical and Electronics
Bangladesh University of Engineering and Technology(BUET)
CGPA: 3.68/4.00, Address: Dhaka, Bangladesh.
THESIS - Device Theory and Nano-photonics: Photovoltaic and Optoeletrical effects on Thin Flim Plasmonic Solar Cell

PROFESSIONAL EXPERIENCE

YORK UNIVERSITY, LASSONDE SCHOOL OF ENGINEERING January 2019 - Present
Electronics Additive Manufacturing (E-AM) Lab, York University, Canada (Graduate Research and Teaching Assistant)

- Teaching and taking labs, tutorial, grading the undergraduate students in Lassonde School of Engineering in the Computer Science Department. The most recent courses are- Software Tools, Embedded Systems, Engineering Electromagnetics, and Electronic Devices.
- Research work is going on in collaboration with- NRC, Faculty member- Gerd Grau, Ruth Urner, Calden Wolka. We have already developed a machine learning-based Material Drop Generation Predictive Module for Customized Inkjet Printer for flexible wearable electronics printing, which outstands theoretical modeling techniques by saving time and material consumption by 70%. Stack: Python, Relational Database (MySQL DB, PostgreSQL-Server), No-SQL Databases- MongoDB, AWS Distributed Echo System Tools- Map Reduce (Parallel Processing Framework), PIG Latin (Scripting Language for Parallel Data Processing(ETL)), Amazon Redshift(Data Warehouse), EMR(Hadoop Framework), Quicksight(BI), S3(Object Storage) Hadoop, Power BI, Apache Hive, Spark, Tensorflow, JupyterLab, D3, Tableau, Power BI, GoogleColab, Pandas, Agile Working Environment.
- Submitted work- Machine Vision Methodology for Inkjet-Printed Pattern Generation and Validation in Canadian Robotic Vision. It beats regular market printing pattern accuracy by 25%. Used Python and Spark to scrape, clean, and analyze large datasets. Deployed ResNet, RetinaNet for detecting shapes and patterns. Stack: Python, SQL, OpenCV, Git, Bash, Spyder, NetworkX, D3, GoogleColab.
- Accomplished Big data Analysis and Visualization project on Airbnb Market Price Prediction and Visualization. Deployed clustering and k-nearest neighbors to identify matching Airbnb owners, designed and developed real-time recommendation engine for Toronto Airbnb Market, Refined DNN and LSTM Network to build sentiment analysis model to improve Airbnb sales, Transformed raw data into MySQL, Hadoop with custom-made ETL application to prepare unruly data for machine learning Stack: Python, SQL, R, Apache Spark, XML, Kafka, Dataflow, Hadoop, Bokeh, Tableau, Git, Spyder, NetworkX, D3, GooglePub/Sub.
- Completed Project on ”Revealing Skin Malignancy with Extrusion Printed Flexible UWB Micro-Strip Antenna Array”- as a part of MA.Sc course work of Printed Electronics.

RENATA LIMITED October 2015 - December 2018
Engineering Department under Manufacturing Division, Dhaka, Bangladesh (Engineering Executive)

- Identifying manufactured product and packaging defects with the vision-based sensory application. Improving machine and neural applications for catching environmental and product errors. Developed innovation, collaboration, integrity, communication skills while leading a team of 10 technicians and collecting information from the non-technical department. Hands-on experience on - Python, SQL, Excel, Matlab, C.
- Solving PLC(Programmable Logic Controller), HMI(Human Machine Interface) related machinery problems, and designing customized project systems. Stack: Ladder Logic Program at Siemens, Omron PLC and HMI, Automation, Autocad, Scada.
- Database management and data analytics of Building Management System (BMS), Fire System, and ERP inventory management system for the respective area. Stack: Oracle, SQL, Honeywell, Excel.
- Electrical Service Design and system embedding with hardware and software integration for new projects going on in different sections. Supported manufacturing division by ensuring continuous electrical support, including power generation and electromechanical support of production machines.

Geeksntechnology LTD, Mohakhali, Dhaka
Marketing Executive April 2015 - June 2015

- Dealing with clients about the price and advantages of web hosting, web server, web pages constructions.Generated leadership dimensions and applicant assessment scale. Completed web hosting survey and its market demand in Bangladesh Prospective. Mainly dealing with garments, furniture industries, school and college sectors.

Bangladesh University of Professionals, Dhaka
Research Assistant October 2014-February 2015

- Helping Prof Dr. Selim Reza in preparing course curriculum and analyzing papers and documents

Robi Axiata Limited, Gulshan-2, Corporate Head Quarter, Dhaka January 2015- March 2015
Intern at Service Operational Center (SOC) department

- Conducted preventive maintenance, health checking of optical fiber communication. Checked the server messages and found errors at this 3rd largest telecommunication Company in Bangladesh. Gathered telecommunications and networking practical knowledge. Send bulk s.m.s to clients.

AREA OF EXPERTISE

Training and Certification

- SciNEt High-Performance Computing (HPC) Summer School, 2019 on artificial intelligence and parallel programming, distributed computing.
- York University Fall Research Data Camp on machine learning, big data analytics, technical writing, strategy for business test case study, modeling documentation, design thinking, data management, project documentation, operational research, professional knowledge development.
- Data Camp certification on data analysis, visualization, machine learning algorithms, and deep learning, Database Design, Linkedin certification on transfer learning, and Generative Adversarial Network.

Research and Projects

- Freelancer at 'UpWork.com.' Profile: https://www.upwork.com/o/profiles/users/~01172a22cf14bdb2cf/
- Patterning optimization and defect minimization through deep leaning and comparative study with a vision-based approach.
- Tracking and classifying object on motion using Retina-Net based object tracking and use the latent space transfer learning from the auto-encoders.
- Canadian Airbnb Business market analysis and forecasting through learning through bid data query and visualization tools. Building Movie (MovieLens Dataset), Songs, Resume, Customer Rating Recommendation Engines with PySpark from text frequency analysis and collaborative filtering. Stack- PySpark, SparkSQL, MLliB, RDD.
- SQL- MySQL, IBM DB2 on cloud database, No-SQL Database Design Project in Datacamp: 'Exploring 67 years of Lego' and 'Analyzing International Debt Statistics' in Data camp. Analyzed international debt data collected by The World Bank to find out the total amount of debt owed by the listed countries in the dataset, countries owning the maximum amount of debt, the average amount of debt owed by countries across different debt indicators, and showing the results using D3and Tableau.
- Material Behavior Prediction with ensemble learning.
- Developed a real website for a real client with HTML, CSS, Javascript, Node.js, MySQL. Website Link -https://www.davidchuschinabistro.com/#/

- Material Behavior Prediction with ensemble learning.
- Image processing and augmented reality projects-Sonar system and Wifi based system handling with Arduino nano.
- 8-bit pc (Microprocessor, Assembly Language, Matlab, Proteus Simulation). Electronic car parking system with LED and Logic gates (DLD, VHDL, Verilog, PCB design, Proteus simulation) 4-bit incrementer decrementer system design with Cadence. Line follower robot competition 2012 at BUET (MikrC, AVR programming, PCB design, Micro-controller, Mechanical part).
- Electrification of Large Building System (AutoCAD).Design of ready-made garments industry for fire safety (AutoCAD). GPS interfacing with AVR microcontroller (GPS, AVR programming, Microcontroller, Microprocessor, Assembly, Proteus, PCB Design)
- For specific power KVA and reactive power, max power factor determination. (PSAF, Matlab) Implementation of fault analysis in a power system. (PSAF, Matlab). Study of BUET Gas Turbine and Diesel Engine power plant and substation. PSPICE simulation related projects- Automated plant irrigation system with Arduino UNO.

Manufacturing and Characterization Tools

- Custom Built Inkjet Printer, Ultimaker 3D printer, Voltera Extrusion Printer, Ossila Spin Coater, Laser Sintering, Xenon Intense Pulsed light Sintering, Thermo Haake Twin Screw Compounder, and Craver Press Compression Molding system. Field Effect Scanning Electron Microscope (FESEM), FT-IR spectroscopy, Probe Station, Differential Scanning Calorimetry, Profilometer.

Programming Skills

C, C++, Python, Java, Statistical Analysis (R), Bash Shell Scripting, Unix/Linux, SQL (MySQL), No-SQL (MongoDB), Matlab, Assembly, Quartus, AutoCAD, Embedded System Programming, Web development (HTML, CSS), D3, Image Processing, Hadoop ecosystem, Data cleansing, modeling, and mining, Machine learning, Automation with Programmable Logic Card and HMI, Interfacing different type of sensors.

PUBLICATIONS

- ”Machine Learning-Based Data-Driven Approach for Optimized Inkjet Printed Electronics,” Published in MRS Fall 2019 conference.
- ”Machine Vision Methodology for Inkjet-Printed Pattern Generation and Validation,” Accepted in CRV Summer 2020.
- ”Anomaly Detection of River Data For Disaster Prevention.” Vol7-Issue9-ijes-2018.
- ”Detection of drug-induced QT Syndrome from ECG using machine learning techniques.” DOI: 10.1109/ICECE.2018.8636730
- Thesis on ’Plasmonics Solar Cell’ under Dr. FARSEEM MANNAN MOHAMMODI. Paper Published: ”Photovoltaic characteristics and non-idealities of thin-film silicon plasmonic solar cells.” DOI: 10.1109/ICTP.2015.7427929,
- Paper published in Photonics (ICP), 2016 IEEE 6th International Conference on: ”Efficiency enhancement and reflectance reduction of thin-film silicon plasmonic solar cells.” DOI: 10.1109/ICP.2016.7509994
- ”A Thorough Assessment on Differential Gene Expression Analysis.” (ID: ICJASRE2018000355)
- Paper on ”WiMAX vulnerability and security” with BUP CSE head Dr. Salim Reza.

INTERESTS

Foreign language, history, music, software engineering, machine learning, printed electronics, travel, Unix, graphic design, and cooking.

REFERENCES

- MA.Sc Supervisor: Gerd Grau, Assistant Professor of Lassonde School of Engineering, York University Email: grau@eecs.yorku.ca
- Job Supervisor: Mehedi Zaman, Manager of Engineering Dept, Renata Limited Email: mehdi@renata- ltd.com
- Thesis Supervisor and Fabrication Technology Course Teacher: Dr. Farseem Mannan Mohammedy, Associate Professor of Bangladesh University of Engineering and Technology, Room: ECE 424, Phone: 6561(O), 01715044474(M), Email:farseem@eee.buet.ac.bd
- Intern Administer: Imtiaz Hassan, General Manager of Technology Division, Robi Axiata Ltd.Phone:01819210344
- Marketing Experience Verification: SM. Kiron, CEO of Geeksntechnology Ltd. Phone:01613083375. Email: sm.kiron@geeksntechnology.com