Rakib Al-Fahad

CONTACT INFORMATION

rakibalfahad@gmail.com
901-279-4128
https://rakibalfahad.github.io/

1316 NE Carlaby Way, Apt 178
Hillsboro, OR 97124

EDUCATION

Ph.D. in Electrical and Computer Engineering (May 2020**))**
The University of Memphis, Memphis, TN
M.Sc. in Electrical & Computer Engineering (May 2016**)**
The University of Memphis, Memphis, TN, USA
B.Sc. in Electronics & Communication Engineering (May 2006**)**
Khulna University of Engineering & Technology Khulna, Bangladesh

SPECIALIZATION

- Exploratory data analysis, visualization and pattern analysis
- Feature selection in higher dimensional data with a limited sample size
- Classical machine learning, clustering, and regression analysis
- Network analysis, visualization and graph mining
- Bayesian non-parametric methods for clustering and time series analysis
- Recurrent neural network analysis for time series prediction, classification, and forecasting
- Convolutional neural network, transfer learning, and generative adversarial networks
- Representations and visualization of visual concepts learned by convnets.
- Big data analysis in a distributed computing system using Scala and Apache Spark.

TECHNICAL SKILLS

Programming Language: Python, R, C++, Matlab, Scala, Shell Scripting, SQL
Operating Systems: Windows, macOS, Ubuntu, CentOS
Publishing: LaTeX
Machine Learning tools: Scikit-learn, Tensorflow, Keras, MLib, MxNet
Graph Mining: Gephi, GraphX
Data visualization tool: Matplotlib, Seaborn, Plotly, Bokeh, Holoviews, Datashrader, D3.js

PROFESSIONAL EXPERIENCE

Intel Corporation
Cloud Solutions Engineer **June** 2020 – **Present**

- Continuously learn and deep dive into the partner's technology (e.g. Microsoft, VMware, RedHat) to use this technology to solve customer's problem.
- Designing, executing and analyzing software and hardware architecture performance, capacity and other test results.
- Proposing constant improvements to Reference Architecture in both areas SW and HW.
- Identifying and proposing solutions for HW and SW bottlenecks in Reference Architecture.
- Collaborating with other Intel departments and third-party vendors, acting as a binder between teams to fixing issues and determine best solution.

Intel Corporation
Machine Learning Intern **Feb** 2019 – **May** 2020

- Building machine-learning based products/solutions, which provide descriptive, diagnostic, predictive, or prescriptive models based on data.
- Use or develop machine-learning algorithms, such as supervised and unsupervised learning, deep learning, reinforcement learning, Bayesian analysis and others, to solve applied problems in various disciplines such as Data Analytics, Computer Vision, Robotics, etc.
- Interact with users to define requirements for breakthrough product/solutions. In either research environments or specific product environments, utilizes current programming methodologies to translate machine learning models and data-processing methods into software.
- Completes programming, testing, debugging, documentation and/or deployment of the solution/products. Engineers Big Data computing frameworks, data modeling and other relevant software tools.

The University of Memphis
Graduate Teaching Assistant **August** 2013 – **May** 2013
Courses Taught: Intro EECE Lab, Electronics I, Signals & Systems II, Image Processing, Pattern Recognition.

Grameenphone Ltd., Bangladesh
Senior System Engineer, Operations, Technology **Sept** 2006 – **Sept** 2013

- Handle the Core Node, Transmission(Core-TX, SDH, and PDH) and BTS faults in the network
- Handle Switch location power fault handling
- Carry out preventive maintenance for TX/BTS/Core sites in the network
- Carry-out the Work Requests from other departments
- Improvement/development/optimization/quality assurance works of existing network

Research Experience

Computer Vision, Perception, and Image Analysis (CVPIA) Lab, UofM:

Project: Neural dynamics underlying the emergence of auditory categorization and learning: PI: Gavin M. Bidelman, Co-I: M. Yeasin, UofM ECE)- NIH-NIDCD R01 - $1,879,543 - 5/18-4/23 : This project will support our work to better understand not only the neurobiology of normal perception of speech, music and auditory learning, but also inform potential interventions for certain communication problems that impair the fundamental process of categorizing sounds.
Project: Neuroimaging based predictive modeling of cognitive events:
This is colaborative project with St. Jude Children's Research Hospital, Memphis, TN led by Dr. Mohammed Yeasin and Dr. Wilburn Reddick, Dr. Madhusudhanan Balasubramanian and Dr. Gavin M. Bidelman. The main goal of this neuroimaging based project is to understand and model of cognitive event, model cognitive event using network description and nnalyze time-varying network description.
Project: Human Connectome Project:
Mapping of the human connectome offers a unique opportunity to understand the complete details of neural connectivity. The main goal is to:

- Find out individual difference form human brain connectivity using deep learning and graph mining approach led by Dr. Mohammed Yeasin and Dr. Abbas Babajani-Feremi.
- Model epistemic state of mind and color of emotion from the electroencephalogram (EEG) and physiological data. This research is integral part of the ongoing blind ambition project led by Dr. Mohammed Yeasin.

Publications

- Al-Fahad, Rakib, Mohammed Yeasin, and Gavin M. Bidelman. "Decoding of single-trial EEG reveals unique states of functional brain connectivity that drive rapid speech categorization decisions." Journal of Neural Engineering (2019).
- Al-Fahad, Rakib, et al. "Early Imaging-Based Predictive Modeling of Cognitive Performance Following Therapy for Childhood ALL." IEEE Access 7 (2019): 146662-146674.
- Al-Fahad, Rakib, and Mohammed Yeasin. "Micro-states based dynamic brain connectivity in understanding the commonality and differences in gender-specific emotion processing." 2019 International Joint Conference on Neural Networks (IJCNN). IEEE, 2019.
- Al-Fahad, R., Yeasin, M., Anam, A.I. and Elahian, B., 2017, May. Selection of stable features for modeling 4-D affective space from EEG recording. In Neural Networks (IJCNN), 2017 International Joint Conference on (pp. 1202-1209). IEEE.
- Al-Fahad, R. and Yeasin, M., 2016, December. Robust modeling of continuous 4-d affective space from eeg recording. In Machine Learning and Applications (ICMLA), 2016 15th IEEE International Conference on (pp. 1040-1045). IEEE.
- Ahmed, F., Mahmud, M. S., Al-Fahad, R., Alam, S., and Yeasin, M. 2018, April. Image Captioning for Ambient Awareness on a Sidewalk. In Data Intelligence and Security (ICDIS), 2018 1st International Conference on (pp. 85-91). IEEE.
- Yeasin, Mohammed, Mohsen Maniat, and Rakib Al-Fahad. "Optimal packaging of high value, temperature sensitive, perishable products."

Presentation

- Rakib Al-Fahad, M.Y, J Glass, H. Conklin, L. Jacola, W. Reddick, 2017. Early Imaging Based Predictive Modeling of Cognitive Performance Following Therapy for Childhood ALL. OHBM 2017: Vancouver, Canada, Poster Number: 3910
- Rakib Al-Fahad, M.Y., 2016. What does Band Frequency Activities Tells us about the 4-D Affect Space? OHBM 2016: Geneva, Switzerland, Poster Number: 3395