JESSICA SHARMIN RAHMAN

PhD Candidate

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EXPERIENCE

Academic Tutor
The Australian National University

📅 July 2018 – Present

- COMP3900/6390 Human Computer Interface Design and Evaluation and COMP1710/6780 Web Development and Design

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Research Assistant
Immersive Analytics Lab, CSIRO

📅 February 2020 – May 2020

- Immersive Data Visualisation of Population-Scale Genome Architectures

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Chief Academic Tutor
The Australian National University

📅 February 2019 – June 2019

- COMP3710, Topics in Computer Science

SELECTED PROJECTS

Music and Emotion

📅 April 2019 – present

- Collected physiological signals such as GSR, HRV, EEG, functional imaging of brain and eye gaze behavior to understand effects of music in identifying emotion from different categories of videos (Analysis is ongoing)

Immersive Data Visualisation of Population-Scale Genome Architectures

📅 February 2020 – May 2020

- Conducted interviews of experts for the project
- Performed qualitative analysis on the data to identify recommendations for the visualization methods
- Prepared evaluation reports for the project

Understanding psychophysiological behavior during reading and music listening

📅 May 2018 – December 2018

- Collected physiological signals such as GSR, HRV, EEG and eye gaze behavior to understand effects of different music genres on emotional response and reading behavior
- Analyzed the physiological signals using machine learning techniques to predict participants' emotional response

EDUCATION

Doctor of Philosophy, Engineering and Computer Science
The Australian National University

📅 December 2017 – Present

Bachelors of Science (Honors) in Computer Science and Engineering
University of Dhaka

📅 January 2012 – March 2016

SKILLS

Physiological Signal Processing

Affective Computing

EEG, fNIRS, EDA, BVP, Eye Gaze Analysis

User Experience Research

Qualitative Analysis

Quantitative Analysis   Python

Matlab   C/C++   Pandas   Numpy

Scikit-learn   Tensorflow   Keras

Jupyter   HTML   CSS   JavaScript

PHP

ACHIEVEMENTS

- Winner of People's Choice Award in ANU 3 Minute Thesis Finals (2020)
- Selected as 1 of the 5 students to represent The Australian National University in Global Young Scientists' Summit (GYSS) in Singapore (2020)
- Recipient of Australian Government Research Training Program International Fee Offset and Stipend Scholarship (2017-2021)
- Recipient of RFL Inspiring Women Award in Category: Leaders of Tomorrow
- Recipient of EBL-DUAA Inspiration Scholarship (2015)
- Winner of Startup DU: Business Process Tool Competition (2014)

SELECTED PROJECTS

Advanced Analytics to Reveal Novel Insights into 'Worth of Water'

📅 March 2017 – August 2017

- New South Wales Department of Primary Industries (Water) project in Collaboration with Advanced Analytics Institute, UTS, Sydney
- Applied visualization techniques to identify useful insights on water quality of Australia using Javascript

Kinect Based Fruit Names and Etiquette Learning app

📅 July 2015

- Windows application built using C# and Kinect V2 sensors
- Conducted observation, interviews and paper prototype testing to gather requirements to build educational applications for children with autism

PUBLICATIONS

- Rahman, J. S., T. Gedeon, S. Caldwell, R. Jones, and Z.Jin (2021). "Towards Effective Music Therapy for Mental Health Care Using Machine Learning Tools: Human Affective Reasoning and Music Genres". In: *Journal of Artificial Intelligence and Soft Computing Research* 11.1, pp. 5–20.

- Brewer, M. and J. S. Rahman (2020). "Pruning Long Short Term Memory Networks and Convolutional Neural Networks for Music Emotion Recognition". In: *International Conference on Neural Information Processing*. Springer, pp. 343–352.

- Rahman, J. S., T. Gedeon, S. Caldwell, and R. Jones (2020). "Brain Melody Informatics: Analysing Effects of Music on Brainwave Patterns". In: *2020 International Joint Conference on Neural Networks (IJCNN)*, pp. 1–8.

- Rahman, J. S., M. Z. Hossain, and T. Gedeon (2020). "Are paired or single stimuli better to recognize genuine and posed smiles from observers' GSR". in: *Proceedings of the 32nd Australian Conference on Human-Computer-Interaction*. OZCHI'20. Online.

- Renkin, M. and J. S. Rahman (2020). "Improving the Stability of a Convolutional Neural Network Time-Series Classifier Using SeLU and Tanh". In: *International Conference on Neural Information Processing*. Springer, pp. 788–795.

- Rahman, J. S., T. Gedeon, S. Caldwell, R. Jones, M. Z. Hossain, et al. (2019). "Melodious Micro-frissons: Detecting Music Genres From Skin Response". In: *2019 International Joint Conference on Neural Networks (IJCNN)*, pp. 1–8.

- Rahman, J. S., M. Z. Hossain, and T. Gedeon (2019). "Measuring Observers' EDA Responses to Emotional Videos". In: *Proceedings of the 31st Australian Conference on Human-Computer-Interaction*. OZCHI'19. Fremantle, WA, Australia, pp. 457–461.

- Rahman, J. S., J. Li, et al. (2018). "Connectivity Based Method for Clustering Microbial Communities from Metagenomics Data of Water and Soil Samples". In: *2018 International Joint Conference on Neural Networks (IJCNN)*. IEEE, pp. 1–8.

- Chowdhury, A., J. S. Rahman, and M.S. Hawlader (2016). "Well-connectedness-a novel measure for improving protein complex detection from PPI network". In: *2016 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB)*. IEEE, pp. 1–6.

AFFILIATIONS

- Associate Chair of DIS 2021: ACM Designing Interactive Systems Conference (2021)
- Logistics Chair of OzCHI 2020: 32nd Australian Conference on Human Computer Interaction (2020)
- Program Committee Member of ICONIP 2019: 26th International Conference on Neural Information Processing of the Asia Pacific Neural Network Society (2019)
- Reviewer for Elsevier Neural Networks Journal, CHI '21, OzCHI '20, OzCHI '19, ICONIP '19
- Dance Crew Member at Project Beats Dance Studio (2019 - present)

REFEREES

Prof. Tom Gedeon
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