JESSICA SHARMIN RAHMAN

PhD Candidate

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EXPERIENCE

Academic Tutor

The Australian National University

July 2018 – Present

- Worked as academic tutor for the courses COMP3900/6390 Human Computer Interface Design and Evaluation and COMP1710/6780 Web Development and Design
- Conducted tutorials on design principles, user evaluation, qualitative and quantitative data analysis, HTML, CSS, Javascript
- Marked assignments and examination scripts

Research Assistant

Immersive Analytics Lab, CSIRO

February 2020 – May 2020

- Conducted interviews of experts for the project “Immersive Data Visualisation of Population-Scale Genome Architectures".
- Prepared evaluation reports for the project.

Chief Academic Tutor

The Australian National University

February 2019 – June 2019

- Participated in course design for the course COMP3710, Topics in Computer Science
- Conducted tutorials and trained students to use various wearable devices for human physiological signal collection
- Conducted oral examination

SELECTED 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. DOI: https://doi.org/10.2478/jaiscr-2021-0001.
- 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. DOI: 10.1109/IJCNN48605.2020.9207392.
- 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. DOI: 10.1109/IJCNN.2019.8852318.
- 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: Association for Computing Machinery, pp. 457–461. ISBN: 9781450376969. DOI: 10.1145/3369457.3369516.

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
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)

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)

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

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

March 2017 – August 2017

- New South Wales Department of Primary Industries (Water) project in 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 for Human Computer Interaction course
- Conducted observation, interviews and paper prototype testing to gather requirements to build educational applications for children with autism

HR Management Tool

June 2014

- Web based tool developed using adapter design pattern and bootstrap
- Winner of Startup DU: Business Process Tool Competition

AFFILIATIONS

- Associate Paper 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)
- Dance Crew Member at Project Beats Dance Studio (2019 - present)

REFEREES

Prof. Tom Gedeon
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