

Jessica Sharmin Rahman

PhD Student in Computer Science

I am a human-centred computing researcher seeking to get practical experience in user experience research. I have experience in collecting and analyzing physiological data, gathering requirements and conducting usability studies.



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SKILLS

User Experience Research:
Observation, Interviews,
Paper prototyping,
Qualitative and
Quantitative Analysis

Physiological Signal
Recording & Processing:
EEG, fNIRS, SC, BVP, Eye
Gaze etc

Data Analysis: Pandas,
Numpy, Scikit-learn,
Tensorflow, Keras, Jupyter,
PyTorch

Programming: Python,
Matlab, C, C++

Web Designing: HTML, CSS,
Javascript, PHP

ACHIEVEMENTS

People's Choice Winner -
ANU 3MT Finals (09/2020)

Australian Government
Research Training Program
International Fee Offset &
Stipend Scholarship
(2017 - 2020)

Global Young Scientists'
Summit (GYSS) (2020)

*Selected as 1 of the 5 students to
represent The Australian National
University in GYSS 2020 to be held in
Singapore*

RFL Inspiring Women Award
in Category: Leaders of
Tomorrow (2015)

EBL-DUAA Inspiration
Scholarship (2015)

EDUCATION

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

12/2017 - Present

Canberra, ACT, Australia

Thesis Title

- ▣ Detecting the effect of music and other stimuli on brainwave patterns

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

01/2012 - 03/2016

Dhaka, Bangladesh

WORK EXPERIENCE

Research Assistant Immersive Analytics Lab, CSIRO

02/2020 - 05/2020

Commonwealth Scientific and Industrial
Research Organisation (CSIRO)

Achievements/Tasks

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

Chief Academic Tutor COMP3710, Special Topics in Computer Science

02/2019 - Present

The Australian National University

Achievements/Tasks

- ▣ Participated in course design
- ▣ Conducted tutorials and trained students to use various wearable devices for human physiological signal collection
- ▣ Conducted oral examination

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

07/2018 - Present

The Australian National University

Achievements/Tasks

- ▣ Conducted tutorials on design principles, user evaluation, qualitative and quantitative data analysis, HTML, CSS, Javascript
- ▣ Marked assignments and examination scripts

SELECTED PUBLICATIONS

Conference Paper

Brain Melody Informatics: Analysing Effects of Music on Brainwave Patterns

Author(s)

Jessica Sharmin Rahman, Tom Gedeon, Sabrina Caldwell, Richard Jones
2020
International Joint Conference on Neural Networks (IJCNN), 2020, IEEE

Journal Paper

Towards effective music therapy for mental health care using machine learning tools: Human affective reasoning and music genres

Author(s)

Jessica Sharmin Rahman, Tom Gedeon, Sabrina Caldwell, Richard Jones
2021
Journal of Artificial Intelligence and Soft Computing Research

ACHIEVEMENTS

Winner of Startup DU –
Business Process Tool
Competition (2014)

LANGUAGES

English
Native or Bilingual Proficiency

Bengali
Native or Bilingual Proficiency

INTERESTS

Dance

Choreography

Travel

SELECTED PUBLICATIONS

Conference Paper

Melodious Micro-frissons: Detecting Music Genres From Skin Response

Author(s)

Jessica Sharmin Rahman, Tom Gedeon, Sabrina Caldwell, Richard Jones, Md. Zakir Hossain and Xuanying Zhu
2019

International Joint Conference on Neural Networks (IJCNN), 2019, IEEE

Conference Paper

Are paired or single stimuli better to recognize genuine and posed smiles from observers' Galvanic Skin Response?

Author(s)

Jessica Sharmin Rahman, Md. Zakir Hossain and Tom Gedeon

2020

32nd Australian Conference On Human-Computer Interaction, ACM

SELECTED PROJECTS

Music and Emotion (04/2019 - 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 (05/2018 - 12/2018)

- 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' (03/2017 - 08/2017)

- 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 & Etiquette Learning app (07/2015)

- 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 (06/2014)

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

AFFILIATIONS

Logistics Chair

OzCHI 2020: 32nd Australian Conference on Human Computer Interaction

2020

Australia

Program Committee Member

26th International Conference on Neural Information Processing of the Asia-Pacific Neural Network Society (ICONIP)

2019

Canberra, Australia

Dance Crew Member

Project Beats Dance Studio

2019 - Present

Canberra, Australia

REFERENCES

Tom Gedeon

"Professor of Computer Science"

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Sabrina Caldwell

"Lecturer of Computer Science"

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