

# Wageesha Bangamuarachchi

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## Research Interests

Computer science and engineering undergraduate, interested in researches in areas such as : Machine Learning, Deep Learning, Artificial Intelligence, Ubiquitous Computing and Mobile Sensing. Have research experiences by conducting researches at the intersection of human-computer interaction, ubiquitous computing, mobile sensing, and machine learning for domains such as healthcare and human behavior modeling.

## Education

### BSc Engineering (Honours), Computer Science & Engineering

UNIVERSITY OF MORATUWA, LK

Sep. 2017 - Aug. 2022

- Current GPA 3.98/4.2 (upto 7<sup>th</sup> Semester, Top 15 of the class of 127)

## Experience

### Undergraduate Researcher

UNIVERSITY OF MORATUWA, LK

Apr. 2021 - Jun. 2022

- Supervisors :** Prof. Indika Perera (University of Moratuwa, LK), Lakmal Meegahapola and Prof. Daniel Gatica-Perez (EPFL, CH)
- Research on personalized machine learning models for mood inference using multimodal smartphone sensing data
- Research on eating events detection with smartphone sensing using multimodal smartphone sensing data
- Design and deploy mobile application and ML models to detect eating events real-time by collecting real-world data

### Software Engineer

SYSKO LABS TECHNOLOGIES (PVT.) LTD., LK [IT SOLUTION PROVIDER OF SYSKO CORPORATION, US]

May 2022 - Present

- Cloud infrastructure maintenance and Dev-Ops
- Design and development of E-Commerce application
- Mobile application log analysis and predict possible errors using ML learning models

### Software Engineering Intern

SYSKO LABS TECHNOLOGIES (PVT.) LTD., LK [IT SOLUTION PROVIDER OF SYSKO CORPORATION, US]

Oct. 2020 - Mar. 2021

- Implement test cases to test SOAP endpoints, implement main functionalities to access database and test automation
- Development of RESTful-API, automate endpoint documentation and test automation of REST endpoints
- Mobile application back-end, front-end development and UI test automation

## Publications

Journals ( \* - equal contribution, ☒ - under review )



**W. Bangamuarachchi\***, A. Chamantha\*, L. Meegahapola\*, S. Ruiz-Correa, I. Perera, D. Gatica-Perez; *Sensing Eating Events in Context : A Smartphone-Only Approach*; IEEE Access, vol. 10, 2022.



**W. Bangamuarachchi\***, A. Chamantha\*, L. Meegahapola\*, H. Kim\*, S. Ruiz-Correa, I. Perera, D. Gatica-Perez; *Inferring Mood-While-Eating with Smartphone Sensing and Community-Level Personalization*; ACM Transactions on Computing for Healthcare (ACM HEALTH).

## Technical Skills

### Languages

Python, Java

### Machine Learning

Keras, Scikit-Learn, Pandas, Numpy

### Frameworks

Spring-boot, Android

### Databases

PostgreSQL, OracleDB, MongoDB

### Platforms

Windows, Linux(Ubuntu), Android

### Other

Computer Vision, Model Personalization, Neural Networks, Object Oriented Software Development, Human-Computer Interaction, Bioinformatics

## Research Experience

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### Sensing Eating Events in Context : A Smartphone Only Approach

ADVISORS : L. MEEGAHAPOLA AND PROF. D. GATICA-PEREZ (EPFL, CH), PROF. I. PERARA (UNIVERSITY OF MORATUWA, LK) 2021

- Investigated and showed that passive smartphone sensing features such as accelerometer, location, app usage, screen usage and battery usage can be used to detect eating and non-eating events in real life situations with a F1-score of 85.2%.

### Inferring Mood-While-Eating with Smartphone Sensing and Community-Level Personalization

ADVISORS : L. MEEGAHAPOLA AND PROF. D. GATICA-PEREZ (EPFL, CH), PROF. I. PERARA (UNIVERSITY OF MORATUWA, LK) 2022

- Conducted a research on inferring mood-while-eating using smartphone sensing and self-reports. Showed that reasonable F1-scores of the range 75%-81% can be achieved for the three-class mood inference task (positive, neutral, negative) by using a novel user-level-community personalization technique.

### MSense Mobile Application - Sensing Eating Events in Context

ADVISORS : L. MEEGAHAPOLA AND PROF. D. GATICA-PEREZ (EPFL, CH), PROF. I. PERARA (UNIVERSITY OF MORATUWA, LK) 2022

- Designed, developed and deployed a mobile application and ML models (General and personalized models) to detect eating events real-time by using users' behavior and context with the help of sensing features such as accelerometer, location, screen usage and battery usage. Collected real-world data from 12 participants during the pandemic period and observed the model performance.

### MCollect Mobile Application

RESEARCH DATA COLLECTION MOBILE APPLICATION 2022

- Designed and developed an android mobile application to be used as research data collection app with the features such as : customize app to suit different project requirements, collect different types of data, view and download data and can be used offline and online.

### Call Detail Record (CDR) data analyzing library

ADVISOR : L. FERNANDO (LIRNEASIA) 2020

- Designed and developed a python library for CDR data analysis for call, message and antenna datasets. Functionalities : Data cleaning, data modeling and visualization.

## Awards & Honours

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2017-2022 **Dean's list - All the semesters**, Department of Computer Science and Engineering, University of Moratuwa, LK

2021 **IEEEExtreme 15.0 – Island Rank 18, World Rank 247**, Programming competition organized by IEEE, competed against 2500+ teams

2021 **MoraXtreme 6.0 – Island Rank 15**, Programming competition organized by University of Moratuwa, LK, competed against 250+ teams

2020 **IEEEExtreme 14.0 – Island Rank 26, World Rank 274**, Programming competition organized by IEEE, competed against 3000+ teams

2020 **MoraXtreme 5.0 – Island Rank 14**, Programming competition organized by University of Moratuwa, LK, competed against 250+ teams

2020 **HomeAlone2020 Hackathon – Island Rank 3**, 72 hours Hackathon organized by the Students' Union of Faculty of IT, University of Moratuwa, LK, competed against 450+ teams

2020 **Google Hash Code - Island Rank 21**, Programming competition organized by Google

2019 **Code with WIE competition – Best Team Process Award**, Hackathon organized by IEEE Women in Engineering, LK

2019 **University of Moratuwa Colors Award**, Awarded to appreciate non-academic related outstanding performance of the undergraduates of University of Moratuwa, LK

2019 **IEEEExtreme 13.0 - Island Rank 27, World Rank 461**, Programming competition organized by IEEE, competed against 3000+ teams

2019 **MoraXtreme 4.0 – Island Rank 14**, Programming competition organized by University of Moratuwa, LK, competed against 250+ teams

2018-2022 **Mahapola Higher Education Scholarship**, Ministry of Education, LK. Awarded to top 1% of all undergraduates

2016 **GCE Advanced Level – Island Rank 198 out of 30000+ candidates**, Physical Science Stream. Department of Examinations of the Ministry of Education, LK. Z-Score 2.2617

2013 **GCE Ordinary Level – Distinction**, Department of Examinations of the Ministry of Education, LK. 470,000+ candidates