

# VIPULA DISSANAYAKE

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## PERSONAL STATEMENT

PhD candidate and an engineer with 3+ years of experience in software engineering and machine learning in multiple countries (NZ, Singapore and Sri Lanka). Passionate about applying machine learning techniques and algorithm development to solve real-world problems. Over 4 years of successful ML research experience (PhD & MEng) in solving practical problems using representation learning and self-supervised learning techniques on speech and wearable signals. Proven in delivering quality output with tight deadlines and collaborating effectively with the team members.

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## QUALIFICATIONS

### The University of Auckland

Auckland, New Zealand  
2019 - Present

### Doctor of Philosophy

Thesis title: "Towards Emotion Recognition in the wild."

- ML research work to overcome limitations of generalisability and robustness with human emotion recognition in real-life using speech and physiological signals
- Train multimodal self-supervised learning models for physiological signals
- Exploration of fusion mechanism for pretrained signal representations
- Build ML pipeline to conduct experiments
- Android app development with embedded emotion recognition models
- Conduct user experiments
- Publish research outcomes in internationally recognised journals and conferences

### DeepLearning.ai

Coursera, Online  
2019 - Present

### Natural Language Processing (NLP) Specialisation

NLP with Classification & Vector Spaces, NLP with Probabilistic Models, NLP with Sequence Models, NLP with Attention Models

### Machine Learning Engineering for Production (MLOps) Specialisation

ML in Production, ML Data Lifecycle, ML Modeling Pipelines, Deploying ML Models

### Deep Learning Specialisation

Neural Networks and Deep Learning, Structuring Machine Learning Projects, Convolutional Neural Networks, Sequence Models

### The University of Auckland

Auckland, New Zealand  
2018 - 2019

### Master of Engineering (Hons.)

Thesis Title: "CompRate: Towards Continuous Sensing of Heart Rate and Heart Rate Variability using Built-in Accelerometer of Smart Wearable."

- Develop ML algorithms (Neural Network, Decision Trees, Linear Regression, Support Vector Machine, XGBoost) to estimate heart rate signals using built-in accelerometer signals in wearable devices
- Publish research outcomes in internationally recognised conference

### The University of Moratuwa

Moratuwa, Sri Lanka  
2011 - 2016

### Bachelor of Science of Engineering (Hons.)

Specialised in Computer Science and Engineering

## WORK HISTORY

### The University of Auckland

Auckland, New Zealand

Jun 2018 - Nov 2020

### Professional Casual Staff (Software Engineer)

Responsible for software design & development at the Augmented Human Lab

- Design and development of Virtual Reality (VR) applications with Unity3D and deploy on Android and iOS
- Design and development of mobile applications using Flutter, Firebase and Android
- Web application development using NodeJS, Java Spring Framework
- Client engagement for requirement gathering, feature validations and deployment
- Code quality enhancement and maintaining the system stability as architecture evolves

### Singapore University of Technology and Design

Singapore, Singapore

Sep 2017 - Feb 2018

### Research Assistant (Software Engineer)

Software engineering work contributing to a finger-worn intelligence device named FingerReader

- Design and implement the cloud-backend system interfacing in-house machine learning models and 3<sup>rd</sup> party machine learning services
- Implement REST API for the cloud-backend
- Collaborate with hardware engineers to identify and fix technical problems
- Manage Google Cloud platform
- Carry out deployment and maintenance of the backend system
- Optimise existing code segments in the system through code reviews
- Present prototype system at professional events

### CodeGen International

Colombo, Sri Lanka

Aug 2016 - Aug 2017

### Software Engineer

Worked in Research & Development department contributing to system design and implementation

- Initiating and leading the conversational agent project team to design and implement the PoC system
- Perform code and design reviews to improve the code quality of the assets
- Design and Implement a prototype system to reach new clients within a short period
- Research on discourse analysis and the context-awareness of a conversational system
- Submit quick workarounds, analyse and fix internal and external issues
- Interview candidates

### CodeGen International

Colombo, Sri Lanka

Oct 2014 - Apr 2015

### Software Engineering Intern

Industrial training programme provided on 6th semester of University of Moratuwa

- Research and develop an automated web data retrieval tool using a machine learning system (SVM)
- Built a mini-hotel reservation system

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## TECHNICAL SKILLS

- Machine Learning - TensorFlow, Keras, DialogFlow, scikit-learn, R
- Databases - MySQL, MongoDB, PostgreSQL
- Mobile Development - Android, Flutter, Firebase
- Dev tools - Git, Gradle, Maven
- Programming Languages- Java, Python, JavaScript
- Frameworks - Spring Framework
- Cloud Platforms - Google Cloud

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## RESEARCH PUBLICATIONS

Research publications of outcomes of PhD, ME and BSc research works are available in the [Google Scholar author profile](#).

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## REFEREES

Referees are available on request.