

KAUSHALYA MADHAWA

Website: <http://kaushalya.github.io>

(+81) 070-1388-1988 ◇ kaushalya.madhawa@gmail.com

Setagaya-ku, Tokyo 156-0041.

PROFILE

An engineer experienced in research and development of **deep neural networks (DNN)**-based machine learning solutions for **medical imaging**, **drug discovery**, and **graph-structured data**.

EDUCATION

Tokyo Institute of Technology

October 2016 - March 2021

PhD in Computer Science

Tokyo, Japan

Graduate Major: Artificial Intelligence

Advisor: Prof. Tsuyoshi Murata

Thesis: Active Sampling for Graph-structured Data

University of Colombo - School of Computing

January 2013 - January 2015

Master of Computer Science

Colombo, Sri Lanka

Advisor: Dr. A.S.Athukorale

Thesis: Machine Learning for Determining the Newsworthiness of Microblogs

University of Moratuwa

June 2007 - December 2011

BSc (Hons.) in Computer Science and Engineering

Moratuwa, Sri Lanka

Research Project: Implementation of a Machine Learning Library for GPU clusters in CUDA and MPI.

WORK EXPERIENCE

Lily MedTech Inc.

October 2020 - Present

Research Engineer

Tokyo, Japan

- A member of the AI team developing AI models for improving the detection of breast cancer from medical images obtained by a novel ultrasound computed tomography (USCT) device.

Skills: PyTorch, Object detection

Tokyo Institute of Technology

January 2017 - January 2021

Research Assistant

Tokyo, Japan

- Member of CREST Deep project, funded by Japan Science and Technology Agency (JST).
- Implemented different deep neural network (DNN) compression algorithms and performed a [literature survey on DNN compression](#).

Skills: Python, Caffe, CUDA, Pytorch, Git

Preferred Networks Inc.

August 2018 - March 2019

Research Intern

Tokyo, Japan

- Designed and implemented GraphNVP, a normalizing flow-based deep generative model for creating molecular graphs.
- Applied for a patent (patent ID: [US20220044121A1](#))
- Released the code under MIT license: <https://github.com/pfnet-research/graph-nvp>

Skills: Python, Chainer, ChainerMN, Git

LIRNEasia*Researcher*

April 2014 - March 2016

Colombo, Sri Lanka

- As a member of the Big Data for Development (BD4D) project involved in analyzing a large dataset of anonymized call detail records (CDR) obtained from multiple mobile operators in Sri Lanka.
- Performed analysis and visualizations on the social graph of millions of subscribers.

Skills: R, Python, D3.js, Apache Hadoop, Apache Pig, Apache Giraph, Git**Codegen International***Senior Software Engineer*

December 2011 - April 2014

Colombo, Sri Lanka

- Worked in the development team of Travelbox, a travel reservation platform used by clients such as Disney Holidays, US and Virgin Holidays, UK.
- Actively participated in the complete development cycle from understanding client requirements to implementing and delivering solutions on time within an agile environment.

Skills: Java SE, Webservices, SOA, Oracle DB, Postgres-SQL, GWT, Jenkins, Sonar, SVN, Scrum**Excel Technology Lanka Ltd.***Software Engineering Intern*

February 2010 - July 2010

Colombo, Sri Lanka

- Worked in the research and development team of XLCAD, an application used for designing laser engravings.

Skills: C#.NET**SELECTED PUBLICATIONS** [[Google scholar](#)]

-
- **Kaushalya Madhawa** and Tsuyoshi Murata “MetAL: Active Semi-Supervised Learning on Graphs via Meta-Learning.”, *Asian Conference on Machine Learning (ACML)*, 2020
 - **Kaushalya Madhawa** and Tsuyoshi Murata “Active Learning for Node Classification: An Evaluation.”, *Entropy*, 2020
 - **Kaushalya Madhawa** and Tsuyoshi Murata “Active Learning on Graphs via Meta Learning.”, *Graph Representation Learning and Beyond (GRL+) Workshop, International Conference on Machine Learning (ICML)*, 2020
 - **Kaushalya Madhawa**, Katushiko Ishiguro, Kosuke Nakago, and Motoki Abe, “GraphNVP: An Invertible Flow Model for Generating Molecular Graphs.”, *Arxiv preprint*, 2019
 - A. W. Wijayanto*, J. J. Choong*, **K. Madhawa*** and T. Murata, “Towards Robust Compressed Convolutional Neural Networks,” *2019 IEEE International Conference on Big Data and Smart Computing (BigComp)*, Kyoto, Japan, 2019
 - **Kaushalya Madhawa** and Tsuyoshi Murata, “A multi-armed bandit approach for exploring partially observed networks.”, *Applied Network Science*, 2019
 - **P.K.K.Madhawa** and A.S. Athukorale, “A Robust Algorithm for Determining the Newsworthiness of Microblogs”, *International Conference on Advances in ICT for Emerging Regions (ICTer)*, Colombo, Sri Lanka, 2015

AWARDS AND HONORS

-
- Japanese Government Scholarship (MEXT) for doctoral studies, 2016-2019.
 - Bronze medal, Sri Lankan Physics Olympiad 2006.
 - National rank: 28, Advanced Level (Physical Sciences).

COMMUNITY WORK

- Academic reviewer of ICDM (2017, 2018, 2019), CIKM 2019, AAAI 2020, IROS 2021.
- Co-organizer of [Colombo Machine Intelligence Meetup](#) since 2015.
- Community teaching assistant of “Heterogeneous Parallel Programming” course on Coursera, 2013.
- Project Manager of SL2College, an educational non-profit organization in Sri Lanka 2013-2016.

INDIVIDUAL COURSEWORK

Completed online courses on Coursera platform

- Machine Learning taught by Prof. Andrew Ng., Stanford University
- Computing for Data Analysis taught by Prof. Roger D. Peng, Johns Hopkins Bloomberg School of Public Health
- Heterogeneous Parallel Programming taught by Prof. Wen-Mei Hwu, University of Illinois
- Data Analysis taught by Prof. Jeffrey Leek, Johns Hopkins Bloomberg School of Public Health
- Introduction to Data Science taught by Bill Howe, University of Washington
- Introduction to Recommender Systems taught by Prof. Joseph A. Konstan, University of Minnesota
- Quantum Mechanics and Quantum Computation taught by Umesh Vazirani, University of Berkeley

TECHNICAL SKILLS

Programming Languages	Python, Java, C/C++, R, CUDA
Deep Learning frameworks	PyTorch, Chainer, Caffe, Tensorflow
Distributed computing	Apache Hadoop, Apache Pig, Apache Giraph, Apache Hive
Software Engineering	Jenkins, Jira, Sonar, UML, Scrum, Git, SVN