



# Christabella Irwanto

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*A computer scientist and software engineer by training, I am currently pursuing a master's in machine learning. In my work, I strive for thoughtful design, effective communication, elegant code, teamwork, and impact.*

## WORK EXPERIENCE

Sep 2019 -  
Present

**A! Aalto University, Teaching Assistant (AI in Health Technologies), Finland • Current**

Design assignments on probability, linear algebra, calculus, information theory, machine learning, neural networks, reinforcement learning etc. with TensorFlow 2.0 and Python; conduct exercise sessions.

Sep 2019 -  
Present

**A! Aalto University, Research Assistant (Principal Investigator: Arno Solin), Finland • Current**

Conduct research in combining probabilistic models with deep learning, focusing on computer vision.

Jun 2019 -  
Aug 2019

**Google / X Software Engineering Intern, Germany • 3 mos.**

Developed deep learning-based method for 3D pose estimation of planar objects, using synthetic data.

- Extended existing synthetic data generation pipeline for pose estimation using C++, Python, OpenCV.
- Trained and evaluated pose estimation approach on synthetic and real-world data using C++, Python.
- Integrated test automation; made community contributions e.g. dataset visualization, Emacs user guide.

Sep 2017 -  
Aug 2018

**carousell Software Engineer, Singapore • 1 yr**

During my time in advertising, the team doubled in size and became the dominant source of revenue.

- Built a scalable advertising microservice with Go, PostgreSQL, Redis, RabbitMQ, Protobuf, and Docker.
- Built features for the React web app (JavaScript), and for the core back-end Django service (Python).
- Delivered a big data processing Dataflow pipeline in Java, a mobile app feature in React Native, and a tool to generate and visualize neural network embeddings with TensorFlow Embedding Projector in Python.
- Learnt best practices for Scrum, code review, testing, continuous delivery, and deployment.

May 2016 -  
July 2016

**traveloka Software Engineering Intern, Indonesia • 3 mos.**

Fully built and shipped two internal tools with Java, Apache Velocity, Play, MongoDB, AWS, and JavaScript.

Jun 2015 -  
May 2016

**(these)abilities Co-founder and Software Developer, Singapore • 1 yr**

Used computer vision to segment keyboards; built website, blog, and forum app for disability communities.

## EDUCATION

Sep 2018 -  
present

**Aalto University, Finland**

Master of Science in Machine Learning, Data Science and Artificial Intelligence (Macadamia)

- Coursework includes data mining, stochastic modelling, Bayesian analysis, and reinforcement learning.

May 2014 -  
Aug 2017

**Singapore University of Technology and Design (SUTD), Singapore**

Bachelor of Engineering in Info Systems Technology and Design; specialisation in Artificial Intelligence

- Summer Exchange at **Massachusetts Institute of Technology, United States (May - Aug '15)**
- Semester Exchange at **KTH Royal Institute of Technology, Sweden (Aug '16 - Jan '17)**
  - Took master's courses including Advanced ML, Advanced Algorithms, AI, and Computer Vision.

## PROJECTS

2018

**Deep learning for molecular graphs, Artificial Intelligence in Health Technologies, Aalto University**

Predicting logP values of molecules with graph convolutional neural networks and other techniques.

2018

**Pong Pygame agent, Reinforcement Learning, Aalto University**

Playing Pong with Asynchronous Advantage Actor Critic (A3C), Deep Q-Network (DQN), etc. in PyTorch.

- 2018 **Music genre classification, Machine Learning Basic Principles, Aalto University**  
Implemented and evaluated various ML models with scikit-learn and TensorFlow for Kaggle competition.
- 2017 **Inventory demand forecasting dashboard for Singapore Airlines, Final Project, SUTD**  
Wrote Vue.js frontend, Phoenix API in Elixir, and data processing and modelling pipeline in R and Python.
- 2017 **Geospatial research tooling, Spatial Networks Research Lab, SUTD**  
Worked on a JavaScript API, Vue.js UI, and provisioning of Elasticsearch clusters with Terraform.

## AWARDS AND HONOURS

- 2012-2018 **Various projects at 17 hackathons, 9 awards, various locations in Europe, Asia, and the United States**  
Including an NLP-powered music video generator, Alexa personal trainer, video chat web app, AR app.
- 2017 **Women Techmakers Scholars Program (Google Anita Borg Memorial Scholarship Program)**  
Invited to attend professional and personal development retreat in Seoul; 1 out of 4 from Singapore.
- 2017 **Google Code Jam to I/O for Women**  
Scored top 150 in global algorithmic programming contest; received funding to attend Google I/O 2017.
- 2014 **SUTD-MIT Global Leadership Programme Scholarship**  
Granted most selective scholarship; 7 out of ~4,000 applicants; given a special concession as the only non-Singaporean recipient due to “demonstrating exceptional and outstanding achievements”.

## TEACHING

- 2019 **Basic deep learning with PyTorch**, teaching assistant, Aalto University Deep Learning master's course
- 2018 **Introductory workshop to web accessibility (a11y)**, facilitator, JSConf.Asia 2018
- 2018 **Competitive programming workshop**, solo instructor, Google International Women's Day Student Summit
- 2017 **Competitive programming and unconscious bias busting**, main instructor, Singapore University (SUTD)
- 2016 **Design thinking and rapid prototyping for mobile accessibility**, main instructor, Grab Lab 8-workshop series
- 2015 **“Ethical Hacking” course**, co-instructor, Dunman High School
- 2015 **“Programming with Scratch” course**, co-instructor, The British Club
- 2014 **“Computer Studies” course**, solo instructor, Raffles Institution

## TECHNICAL SKILLS

	Proficient	Familiar
<b>Languages</b>	- Python, JavaScript, Go	- C/C++, Java, R, Shell, MATLAB, Emacs Lisp, SQL
<b>Tools</b>	- Git, Emacs, scikit-learn	- TensorFlow, Keras, PyTorch, Vue.js, Django, Node.js
<b>Topics</b>	- Machine Learning, Algorithms, Unix, Full-stack Web Development	- Natural Language Processing, Computer Vision, Security, Web Accessibility

## LANGUAGES

Proficient	Conversational	Basic
English	Chinese, Indonesian	Japanese