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 deep learning with probabilistic models, in particular Bayesian nonparametric models, focusing on applications to computer vision and temporal data.

Jun 2019 - Aug 2019

Google / 🔀 Software Engineering Intern, Germany • 3 mos.
Developed deep learning-based method for 3D pose estimation of planar objects for robotics.
- 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 <u>NLP-powered music video generator</u>, <u>Alexa personal trainer</u>, <u>video chat web app</u>, <u>AR app</u>.

2017   **Women Techmakers Scholars Program (Google Anita Borg Memorial Scholarship Program)**
Among 4 from Singapore, invited to attend professional and personal development retreat in Seoul.

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 for "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   **<u>Competitive programming and unconscious bias busting</u>**, main instructor, Singapore University (SUTD)
2016   **<u>Design thinking and rapid prototyping for mobile accessibility</u>**, 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**
Languages	- Python, JavaScript, Go	- C/C++, Java, R, Shell, MATLAB, Emacs Lisp, SQL
Tools	- Git, Emacs, scikit-learn	- TensorFlow, Keras, PyTorch, Vue.js, Django, Node.js
Topics	- Machine Learning, Algorithms, Unix, Full-stack Web Development	- Natural Language Processing, Computer Vision, Security, Web Accessibility

LANGUAGES

Proficient	**Conversational**	**Basic**
English	Chinese, Indonesian	Japanese