



# Luke Wicent Sy

PhD Student in Biomedical Engineering at UNSW

 <http://lukesy.net/>

 [l.sy@unsw.edu.au](mailto:l.sy@unsw.edu.au)

 [in/lukesy](https://www.linkedin.com/in/lukesy)

 [lisy3](https://github.com/lisy3)

## About me

I am passionate about bringing tech. to users specially in the field of robotics, electronics, and compsci.

## Education

Ph.D. Candidate Biomedical Eng'g UNSW | 2021 (expect)

Thesis: Estimation of lower body movement using few wearable sensors

MS Computer Science

GeorgiaTech | 2017 | GPA: 4.0 (4.0)

Specialization: Computational Perception and Robotics. High distinction on Machine Learning and Big Data subjects.

MBA Course Work

Coursera (MOOC) | 2017

Learned basics of marketing, accounting, operations management, developing innovative ideas, and go to market

BS Electronics and Comm. Eng'g

UP Diliman | 2011 | GPA: 1.247 (1.0)

Magna cum Laude, Top 1 of 86, Finished the five years' course in four years.

## Skills

Prog. Languages: Python, Matlab,

Java, C, C++, SQL, R, Assembly

Embedded Systems: Arduino, STM32

Data Science/AI related: pandas,

scikit-learn, keras, matplotlib, openCV

IT Infra: AWS EC2, S3, Lex, EMR,

Lambda; Azure VM; Windows, Linux

(Ubuntu, Archlinux, Redhat)

WebDev: HTML, CSS, JS, JQuery, php

Simulation: Comsol

Design: Eagle, KiCad, OnShape,

Adobe Photoshop

Languages: Filipino, English (Native),

Japanese (Prof.), German (Limited)

Other: MS Office, Git, Bitbucket,

Openproject, Latex

## Work Experience

Since Mar '17 Casual Demonstrator

UNSW

Facilitated learning on classes of 25-35 students with emphasis on inspiring independent thinking and connecting theory with real world applications.

Taught seven biomedical engineering courses on signal processing, modelling, biosensors and transducers, implantable bionics, and biomechanics.

Sep'14-Feb'16 Project Coordinator

Toshiba Industrial ICT Solutions

Investigated the company's product portfolio (~100) towards entering the North America market, and coordinated 3 successful pilot projects around cloud and IoT business between Japan HQ and US subsidiary.

Nov'11-Sep'14 Embedded Software/Test Engineer

Embedded R&D Div., Toshiba Solutions

Developed verification and validation tools to ensure safety of automotive embedded systems and pioneered automated testing in group increasing productivity (~x3) and product robustness.

- Used deep knowledge in assembly language and uC architecture to develop uC simulators for simulating "worst case run time scenarios"
- Automated validation of source code based on document specification using "Bounded Model Checker for C and C++"

Apr'11-Nov'11 Software Engineer

ICANNHAS (start-up)

Web development with web framework python django, html, and javascript.

Jun'09-Mar'11 Student Assistant

UP Instrumentation Robotics and Control Laboratory

Developed embedded systems and softwares that has national impact.

- Redesigned the software architecture of a telehealth system (RxBox) for bringing healthcare to rural areas.
- Developed the communications module of a remote weather station for investigating climate change impact on the coasts (UP MSI ICE CREAM proj.)

## Awards

Dec'18

First Place Award IXL Innovation Olympics. Represented UNSW at an int'l innovation consulting competition with 5 people over eight weeks.

Sep'18-'19

PLuS International Interdisciplinary Researchers Training Grant. One of 34 selected out of 80. Ideation and collaboration workshop @ KCL, London BPI-DOST Science Awardee. Given to science and eng'g students for their potential contributions to industry and nation-building.

Feb'11

'09-'11

Awards from various programming competitions. ACM-ICPC Regionals: 2nd '09 PH, 7th '10 MY. Locals: 1st '10 Java Cup, 2nd '09 Syntax Check.

## Co-Curricular

'19

Chair, IEEE UNSW Student Branch. Re-established the society from inactive state. Built the exec team and society vision from ground up. Ran 21 social and technical events engaging over 550 cumulated attendees.

'19

Pres., Filipino Student Council of NSW. Led the newly founded NSW wide alliance of university/school-based Filipino student orgs., and ran inaugural flagship events that solidified it's role within the NSW Filipino community.

'18-'19

Pres. '19 and VP External '18, UNSW Filipino Student Society. Promoted the Filipino culture, and helped cultivate the Filipino identity of its members by running 15 events engaging over 500 cumulated attendees.

'10

VP, UP Programming Guild. supported training and team recruitment for local and int'l programming competitions (ACM-ICPC) representing the uni.

## Publications and Patents

- [1] J. Huang, C. Osorio, and L. W. Sy, "An empirical evaluation of deep learning for ICD-9 code assignment using MIMIC-III clinical notes," *Comput. Methods Programs Biomed.*, vol. 177, pp. 141–153, Aug. 2019.
- [2] C. Umeda, L. Sy, A. Dai, T. Yanagi, N. Kawakatsu, M. Sato, T. Ono, K. Izutsu, Y. Watanabe, and Y. Hasabe, "Verification system, method, and program (decision table generation from source code)," 2016-143074, Aug. 8, 2016.
- [3] A. Dai, T. Yanagi, C. Umeda, L. Sy, N. Kawakatsu, M. Sato, T. Ono, K. Izutsu, Y. Watanabe, and Y. Hasabe, "Specification extraction method and program (transition diagram simplification)," 2016-143075, Aug. 8, 2016.