

# Julio Hernando Wongso

Electrical engineering, Data Science, Embedded, Software, Computer Vision, Finance

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📍 Singapore / Jakarta



## EXPERIENCE

### AI Singapore

Machine learning engineer (final year project attachment)

📅 08/2020 - present 📍 Singapore

Development and deployment of state-of-the-art **computer vision** models.

- Developed semantic segmentation and instance segmentation data pipeline.
- Implemented Panoptic FPN, Res2Net, and YOLACT models in Keras and PyTorch from research papers.

### NUS Computational Nanoelectronics & Nanodevices Lab

Research engineer intern

📅 06/2020 - 08/2020 📍 Singapore

Developed **Spintronics simulation** software for design of novel electrical component with **Spin Torque Transfer (STT)**. Researched scientific journals and tools to tackle design problems

### Hewlett Packard Enterprise

Software firmware engineer intern

📅 08/2019 - 12/2019 📍 Singapore

Test and develop **firmware** for **networking** devices.

- Involved in proprietary *Aruba OS-CX* Network Operating System development project.
- Implemented **full stack web development project** used for regression test framework automation with MEAN stack (*NestJS* and *VueJS*).
- Developed **SNMP** implementation and **IEEE1588 PTP (Precision Time Protocol)** for new Aruba platforms.
- Developed feature, unit, and component tests for **continuous integration (CI)**.

### Panasonic

Research engineer intern

📅 05/2019 - 07/2019 📍 Singapore

**Deep learning** and **computer vision**: Investigate and test state-of-the-art technologies for semantic segmentation in autonomous vehicles as well as pose recognition models. Audited Stanford Master's level course CS231N.

- Model pruning, quantization, and optimization **reduce** inference time by **12%**
- Data preprocessing and data augmentation **improving model accuracy by 2%**
- Achieve **30% reduction** in model training time with new DevOps tool.
- Created benchmarking tool for proprietary model deployed on an embedded platform.
- Created C++ wrapper for C-based framework to aid AR project.

### JULO Finance

Backend software engineer intern

📅 12/2018 - 01/2019

📍 Jakarta, Indonesia

JULO is a digital lending company employing proprietary credit underwriting and risk assessment technology, winning awards from UNCDF and Indonesian Monetary Authority (OJK).

- Responsible for endpoint integration of analytics RESTful API
- Automate operations team workflow reducing processing time by 10%.
- Maintenance of chat-bot and automated sms/email send service.
- Bug discovery and fixes.
- Created functional script and API to process customer blacklist in network.

## REFERENCES

### Hans Sebastian, CTO JULO Finance

hans@julo.co.id  
+628159147752

### Deval Mehta Samirbhai, Ph.D. Senior R&D Engineer

deval.mehta@IBM.com  
+61403240082

## EDUCATION

### National University of Singapore

Electrical Engineering with Minor in Physics -  
B.Eng Honours with Distinction

📅 08/2017 - present 📍 Singapore

- Invited to and joined **IEEE Eta Kappa Nu Honor Society** for Academic excellence.
- Specialization in **Advanced Electronics**.
- Served as **NUS Student Union Business Committee Executive** (NUSSU BIZCOM) and PINUS **Public Relations Director**.
- Invited as **Teaching Assistant** for programming module.

### KTH Royal Institute of Technology

Electrical Engineering and Computer Science

📅 01/2020 - 07/2020 📍 Sweden

- Graduate level courses in **Machine learning, Advanced controls, High Frequency electronics and Entrepreneurship Innovation**.

### Stanford University

International Honors Program

📅 06/2018 - 08/2018 📍 United States

- Courses in Programming Abstractions (CS106B **Data Structures** and **Algorithms**) and EE102A **Signals and Systems**.

### Anglo-Chinese School International

International Baccalaureate Diploma

📅 03/2015 - 12/2016 📍 Singapore

- Tackle problems on food storage with **Pepsico R&D Principal Scientist** as Junior Member of **NYSA**
- **National Physics Olympiad (OSN)** and **Singapore Chemistry Olympiad**

## CERTIFICATION

### Bloomberg Market Concepts (BMC)

Bloomberg L.P

### AWS Cloud Practitioner Essentials

Amazon

### BCG Digital Transformation Virtual

Experience Program

BCG & Forage.com

## VOLUNTEER EXPERIENCE

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### Residence Cluster Leader

National University of Singapore  08/2018 - 12/2019  Singapore

- Organized and led as project director for a 'Halloween Night' event for the block, which saw **200% increase** in participants as compared to other blocks within the residence
- Initiated a combined-block event to **boost event participation rate** within the residence, which later was **selected to replace** the former floor-only event system by the campus-wide residential team.

### Teaching Volunteer

The Malin Project  12/2017 - 01/2018  Jakarta, Indonesia

A student initiated volunteering project where students spread to different parts of Indonesia to teach. I was the committee in charge of East Jakarta area.

### Volunteer

Habitat for Humanity  2016  Malaysia

Community Service trip to Kota Kinabalu, Malaysia where I help build affordable housing for villagers in remote areas.

### Station Manager

Wheels for Good  2016  Singapore

Aims to raise awareness on the numerous financially ridden Singaporean families. I volunteered to manage some games.

## RELEVANT COURSES

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Data Science and Internet of Things	Artificial Neural Networks and Deep Architectures
Big Data Analytics Using Spark	Financial Markets
Product Management with Lean, Agile and System Design Thinking	Supply Chain Fundamentals
Fabrication Process Technology	Microwave Circuits & Devices (High Frequency Electronics)
Solid State Physics	Modern Transistors and Memory Devices
Advanced Control Systems	Microcontroller Programming & Interfacing

## ACADEMIC PROJECTS

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### LaneNet: semantic segmentation model for autonomous car

Implemented and enhanced LaneNet for lane semantic segmentation in autonomous car.

### Fitness tracker

Fitness Tracker prototype using Cortex-M3 microcontroller (Assembly and C) with sensor and actuator interfacing through I2C, GPIO. Also implemented UART connection with X-Bee for logging purposes.

### Autonomous underwater vehicle

Arduino MODBUS programming for actuator and thruster for SAUVC.

### Piano and voice recorder

FPGA BASYS3 programming with verilog for EE2026 NUS module.

## SKILLS

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### Software

Microsoft Office Suite	Python	C			
C++	Git	SQL	Ruby	Go	CSS
HTML	MATLAB	OpenCV	Assembly		
Shell Scripting	Bootstrap	Web scraping			
Data engineering	Data visualization				
Docker	PyTorch	Tensorflow			
Scikit-Learn	Pandas	Apache Spark			
R	Photoshop	UI/UX Design			
Tableau	AWS	NodeJS	Django		
Flask	JavaScript	Google Cloud Platform			

### Hardware and Engineering

FPGA	Verilog		
Microcontroller Programming	UART		
I2C	GPIO	Arduino	SDR
GNURadioCompanion	FilterPro		

## AWARDS

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National Science Olympiad (Physics) Finalist

International Major Entrance Scholarship UBC

MOE Tuition Grant Award

NJRC Bronze Medal and Research Award

Sevilla Science Competition Silver Medal

ACS Commendation Certificate for Achievement