

# DICKSON NEOH

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## MACHINE LEARNING ENGINEER SUMMARY

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- 9+ years of modeling DL-based time series and computer vision algorithms.
- 10+ years of academic journal and conference publication such as Nature, Elsevier and IEEE Transactions.
- 3+ years of helping companies deploy DL models into production.

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## WORK EXPERIENCE

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### Lecturer

May 2016 - Present

#### Universiti Tenaga Nasional

Taught various courses on microcontroller systems and digital logic design. Lead research grants using deep convolutional networks to identify road signage, LSTM to recognize multivariate time-series from the sensor values of humanoid robots and developed self-supervised Transformer models to predict the amount of charge left in a Li-ion battery. I have had a tight collaboration with industry partners where I deployed computer vision deep learning models on CPU running in real-time.

### Research Engineer

May 2012 - May 2016

#### Universiti Tenaga Nasional

Designed custom printed circuit boards for motor drivers to control robotic actuators. Worked on PID controllers implemented on PIC, Arduino, Raspberry Pi microcontroller boards. Prototyped and deployed an pipe inspection robot using image processing to inspect for defects.

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## EDUCATION

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### Ph.D. in Engineering

March 2018 - June 2022

#### Universiti Tenaga Nasional

This study explores the effectiveness of using deep learning models to estimate state-of-charge (SOC) in the batteries of hybrid electric vehicles. The study conducts various in depth comparative analysis of state-of-the-art deep learning methods applied to SOC estimation. The goal of the study is to develop a novel estimation algorithm that can accurately estimate the remaining charge from the drivers' driving patterns. This work proposes the use of self-supervised Transformer model and yields low error metrics providing a promising alternative to conventional SOC estimation models. See our published [paper](#).

### Masters of Electrical Engineering

January 2012 - January 2015

#### Universiti Tenaga Nasional

This study explores the idea of recognizing the behavior of humanoid robots using a Long Short-Term Memory (LSTM), a variation of recurrent neural networks. The LSTM network is shown capable of classifying robotic maneuvers from joint angle data. See our published [paper](#) and demo [video](#).

### Bachelor of Electrical and Electronics Engineering (Hons.)

June 2007 - June 2012

#### Universiti Tenaga Nasional

This study explored the idea of building a torque control DC motor driver using pulse width modulation (PWM) techniques in combination with PID control algorithms.

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## INTERESTS

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Reading. I have read over 100 books in the past 4 years. Most are self-development and personal health books. My favourites include Deep Work, The Cancer Code, Super Human: The Bulletproof Plan to Age Backward, Ultralearning, The Compound Effect: Jumpstart Your Income, Your Life, Your Success, The Biology of Belief, Atomic Habits, Quiet: The Power of Introverts in a World That Can't Stop Talking, Start With Why and The 7 Habits of Highly Effective People.

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## SKILLS

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Tensorflow/Keras

PyTorch/Fastai

Arduino/Raspberry Pi/ESP32

Nvidia Jetson/Intel VPU/Coral TPU

OpenVINO/TensorRT/TFLite/ONNX

PySpark

Flutter

InfluxDB/Hive/Firebase/MySQL

Azure ML/AWS/Google Cloud

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## OPEN SOURCE

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- Core Developer of IceVision: An Agnostic Computer Vision Framework - <https://github.com/airctic/icevision>
- Code Contributor of TSAI: State of the art deep learning for time series and sequences - <https://github.com/timeseriesAI/tsai>