

# Nathaniel Wihardjo

SOFTWARE ENGINEER

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## Education

### Hong Kong University of Science and Technology

Hong Kong S.A.R

B.ENG IN CHEMICAL ENGINEERING, MINOR IN INFORMATION TECHNOLOGY - UPPER SECOND CLASS HONOUR

2015 - 2019

- Coursework includes: Big Data Mining and Management, Introduction to Natural Language Processing, Search Engine
- Silver Awardee President's Cup 2019: A Fully Conformable Skin Sensor for Sports Fatigue Detection
- Activities: HeadStart Fellow Programme, Indonesian Students of HKUST Committee

### University College London

London, United Kingdom

AFFILIATE STUDENT, CHEMICAL ENGINEERING - FIRST CLASS HONOUR

2017 - 2018

- Coursework includes: Separation Processes, Chemical Reaction Engineering
- Activities: UCL Data Science Society, UCL Photo Society

## Experience

### Macquarie Group Limited

London, United Kingdom

TECHNOLOGY INTERN

Jun. - Aug. 2018

- Built cloud big-data platform through Cloudera cluster management on top of AWS EC2 instances for Energy Market Access data
- Improved database efficiency and queries performance by 99% through Apache Hive and Impala
- Tackled incompatibility between Apache Impala and Kerberos protocol with bash scripting and GRPC protocol
- Communicated and provided Energy Market business with the analysis of the data

### Oddup Limited

Hong Kong S.A.R

RESEARCH INTERN

Jun. - Aug. 2017

- Developed web crawler utilising *scrapy* framework and VBA macro to expand database, resulting in enhanced performance by 60%
- Initiated efficient database cleaning and management processes through Python using *nltk*-based library
- Assisted in finding bugs on new website and back-end system management
- Wrote analysis article and generated daily funding and operation news based on extensive research on Asian startup ecosystem

### Goxip, Moby Road Limited

Hong Kong S.A.R

DATA ANALYST INTERN

Dec. 2016 - Jan. 2017

- Self-taught Javascript on Google Apps Script to automate data aggregation, integration, and visualisation processes
- Analysed sales data to provide better overview of the relation between marketing and sales performance on daily basis
- Designed effective procedures to drive user engagement using VBA coding

## Highlight Projects

### SpaghettiSearch

Go, BadgerDB

CONCURRENT AND SCALABLE SEARCH ENGINE BUILT ON GOLANG

[Code here](#)

- Implemented Go's generator, future, and fan-in fan-out concurrency pattern to leverage retrieval performance
- Implemented Topic-Sensitive PageRank and Vector-Space Model algorithm for ranking
- Designed a scalable database schema on a NoSQL database

### Reinforcement Learning for Financial Trading

pytorch, numpy

AN AUTOMATED MINUTE-BASED TRADING AGENT ON HKEX

[Code here](#)

- Developed base code for trading bot using Deep Direct Reinforcement Learning model
- Assessed methods of knowledge discovery on financial market data

### Concurrent Scraper

java, htmlunit, javafx

OPTIMISED AND FASTER WEBSCRAPER FOR AMAZON AND CRAIGSLIST PORTAL

[Code here](#)

- Wrote a webscraper based on *htmlunit* framework to retrieve queried items
- Increased performance through multi-threading to support concurrency on handling pagination

## Skills

**Programming Language** C++, Python, Go, bash scripting, Java, Visual Basic Application (VBA)

**Data Science** pandas, numpy, Keras, tensorflow, SQL, Hadoop, Apache Spark, Apache Hive & Impala

**Human Language** English (Proficient), Indonesian (Native)