

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 - FIRST CLASS HONOURS

2015 - 2019

- Coursework includes: Big Data Mining and Management, Natural Language Processing, Search Engine
- Publication: A.K. Oktavius *et al.*, "Fully-Conformable Porous Polyethylene Nanofilm Sweat Sensor for Sports Fatigue" IEEE Sensors Journal 21.7 (2021): 8861-8867
- Awards: Hong Kong Institute of Engineers 2019 Best Research Paper on Materials Division, HKUST President's Cup Silver Awardee

University College London

London, United Kingdom

AFFILIATE STUDENT, CHEMICAL ENGINEERING - FIRST CLASS HONOURS

2017 - 2018

- Coursework includes: Separation Processes, Chemical Reaction Engineering

Experience

Macquarie Group Limited

London, United Kingdom

EXECUTIVE, FRONT-OFFICE SOFTWARE ENGINEER

Aug. 2019 - Present

- Developed netback pricing model algorithm in C++ to calculate most profitable LNG trades, providing a range of interfaces from graphical to API for internal functional language, which contributed to 30% of the energy business revenue
- Led the initiative to provide rapid scalability for an in-house application by redesigning the architecture in Python and *Flask* that improved speed of delivery by 50% and reduced labour costs by 80%
- Implemented trading algorithm strategy based on oil stock news using Python's *multiprocessing* and *threading* library, resulted in £8K weekly revenue
- Collaborated with traders to deliver technical solutions on firm's global trading system in C++ using *Bazel* involving commodity products setup, real-time risk reports development, and analytical toolkit restructuring
- Mentored junior developers on career development, coding standard and best practices, and financial products understanding

TECHNOLOGY INTERN

Jun. - Aug. 2018

- Built cloud-based big-data platform using Cloudera cluster management on top of AWS EC2 instances for robust and scalable system
- Leveraged Hadoop framework to provide user-centric access to datasets, resulting in improved queries performance by 99%
- Tackled incompatibility between Apache Impala and Kerberos protocol with bash scripting and GRPC protocol
- Communicated and provided Energy Market Access 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, daily funding and operation news based on extensive research on Asian startup ecosystem

Highlight Projects

Spaghetti Search

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
- Utilised Topic-Sensitive PageRank and Vector-Space Model algorithm for ranking
- Designed a highly-scalable database schema on a NoSQL database

Trading Bot

pytorch, numpy

A REINFORCEMENT LEARNING MINUTE-BASED FINANCIAL 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

Skills

Programming Language

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

Data Science

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

Certification

AWS Certified Machine Learning - Specialty

Human Language

English, Indonesian