LEE SONG HAW COLIN

Employment History

Singapore Institute Of Technology   **Aug 2022 - Nov 2024**
Research Engineer

- Conducted research and development of novel methods for smart contract vulnerability detection
  - https://ieeexplore.ieee.org/document/10430147 - Published Work
  - Designed and implemented a Python-based smart contract vulnerability detection framework using feature vectors extracted from Abstract Syntax Tree (AST), opcodes, and Control Flow Graph (CFG) representations
  - Engineered machine learning models such as Multi-layer Perceptron (MLP), Support Vector Machine (SVM), Long Short-Term Memory (LSTM), Random Forest (RF), and XGBoost (XGB) to train and benchmark vulnerability detection algorithms
  - Leveraged Docker to enable extensive parallel testing and model training
  - Achieved up to 91% accuracy on real-time Ethereum smart contracts with MLP models, maintaining the lowest average False Positive Rate (FPR) of 0.0125 among all evaluated models
- Researched and developed architecture and protocols for reliable communication over the Quantum Internet by integrating quantum and classical networks.

Cloudrush   **May 2022 – June 2022**
Blockchain Engineer

- Develop smart contracts in vyper
- Test driven design using brownie framework
- Ensure DeFi logic caters to the staking formula.

Integrated Health Information Systems   **June 2020 – Apr 2022**
Software Engineer

- Part of the Vaccination Operation Team that develops features for Singapore Vaccination Programme.
- Developer for GPConnect
- Maintain and develop new features based on C# WPF
- Maintain Vital Sign Monitoring app used by community isolation facility based on ASP.Net Core and ReactJs

Lite-On Singapore Pte. Ltd.   **May 2019 – June 2020**
Software Engineer

- Develop GUI using Prism Library 7.1 (MVVM)
- Implement Test-Driven Development for software libraries using MS Test
- Software libraries for in-house developed firmware device

PBA Systems Pte Ltd   **Feb 2017 – April 2019**
Engineer, Application (Robotic Applications)

- Automate production ground with Industrial and Collaborative Robots
- Created Universal Robot cap application for company's linear motor driver product
- Conduct basic to advanced Collaborative robots training

Period	Level of Education / Name of Institution
2023 to 2025	Master of Engineering, Future Communications. (Expected Grad. Year: 2025) / SIT • Specialized in Federated Learning with Blockchain.
2014 to 2016	B.E. in Mechatronics Engineering / SIT- UOG (First Class Honours)
2009 to 2012	Diploma in Mechatronics/ Ngee Ann Polytechnic

Availability to commence work

Immediate

Profile

- (+65) 9889 6426
- colinlsh6@gmail.com
- LinkedIn
- GitHub
- Singaporean
- Blk 655 Woodlands Ring Rd, #03-308, Singapore 730655

Skills

Python	● ● ● ● ●
C#	● ●
Solidity	● ●
JavaScript	● ● ●
React Framework	● ● ●
Communication Skills	● ● ● ● ●
Problem-solving	● ● ● ● ●
Time management	● ● ● ●
Corresponding handling	● ● ● ●
Vendor and Client Management	● ● ● ●
MS Office	● ● ● ● ●

Languages

English	● ● ● ● ●
Mandarin	● ● ● ● ●

Awards

The Future Communications Research & Development Scholarship Programme Scholarship 2023
Wilmar Partial Scholarship 2015