TZU-WEI CHAO

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EXPERIENCE

OneDegree **2020.5 - Present**
Senior Backend Engineer

- Lead a team of 5 backend engineers that develop many core modules
- Develop accumulator (one of the most complicated component) in our insurance system
- Participate in developing 2 customer projects that go to production
- Tools: Python, SQLAlchemy, PostgreSQL, GitLab CI, Docker

Network Security Lab, National Taiwan University **2015.9 - 2019.8**
Lab Member

- Research in software-defined network, web API crawler, blockchain security, and consensus algorithms
- Publish and present a workshop paper in NetSoft conference 2016
- Master thesis: A Security Simulator and Evaluation for Voting-Based Consensus Algorithms

COBINHOOD & DEXON **2018.1 - 2019.5**
Blockchain Researcher

- Research in blockchain and design DEXON consensus algorithm

> DEXON is the fastest (officially online) blockchain system (1s finality) and the first blockchain that provides secure on-chain randomness.

- Develop a consensus simulator for testing/verifying the security of consensus algorithms

National Taiwan University **2018.2 - 2018.6**
Teaching Assistant

- Teaching assistant for **Cryptography and Network Security**

> Outstanding Teaching Assistant Award from the Department of CSIE, NTU

Industrial Technology Research Institute **2016.7 - 2018.6**
Part-Time Software Engineer

- Develop innovative services, including a parking/delivering app and a trading bot platform
- Develop websites, back-end server and Android apps using Java, Node.js and MongoDB

Department of CSIE, National Taiwan University **2015.2 - 2016.1/2017.9 - 2018.1**
Network/System Administrator

- Team leader of the firewall team, responsible for configuring and maintaining the firewall
- Team member of the personal computer team, responsible for maintaining and upgrading systems and software of classroom computers

TECHNICAL STRENGTHS

Programming Languages	Python, Javascript, C/C++, Java, Golang, C#
Database & ORM	PostgreSQL, SQLAlchemy
Development Tools	Git, Vim, Linux, VSCode, GitLab CI, Docker
Professional Knowledge	Blockchain, Network Security, Cryptography, SDN

EDUCATION

National Taiwan University, Taiwan **2017.9 - 2019.8**
M.S. in Computer Science and Information Technology

National Taiwan University, Taiwan **2013.9 - 2017.6**
B.S. in Computer Science and Information Technology

PROJECTS

Consensus Simulator
Consensus algorithms play important roles in distributed systems such as blockchain or database. This project aims to design a framework to simulate consensus algorithms under malicious attacks. It is designed to be flexible and can simulate consensus algorithms with high precision and efficiency.

Crypto Flash
Speed is important when it comes to high frequency auto-trading. Developed in Go, Crypto Flash is a trading bot for cryptocurrencies that aims to be as fast as possible. We provide useful modules for trading and strategy development, including indicators, exchange API and notification broadcasting. We used this project to develop several profitable strategies including funding rate arbitrage, supertrend and re-balance strategy.

DEXON RNG
DEXON blockchain has on-chain randomness generated by threshold signatures, which is unpredictable, secure and verifiable. This web page uses the randomness to create a random number generator. It is fairer than other centralized random number generators since the randomness can be verified and cannot be easily manipulated by anyone.

CobinBot
This project aims to create a flexible infrastructure for developing bots for COBINHOOD exchange. Common modules and APIs are provided to conveniently create bots with different functionalities, such as trading, backtesting, price alerting or attending campaigns.

ACADEMIC PAPERS

- Po-Chun Kuo, Hao Chung, **Tzu-Wei Chao** and Chen-Mou Cheng, "Fair Byzantine Agreements for Blockchains," in IEEE Access
- **Tzu-Wei Chao**, Hsu-Chun Hsiao "A Security Simulator and Evaluation for Voting-Based Consensus Algorithms"
- Tai-Yuan Chen, Wei-Ning Huang, Po-Chun Kuo, Hao Chung, **Tzu-Wei Chao** "DEXON: A Highly Scalable, Decentralized DAG-Based Consensus Algorithm"
- **Tzu-Wei Chao**, Hao Chung, Po-Chun Kuo "Fair Byzantine Agreements for Blockchains"
- **Tzu-Wei Chao**, Yu-Ming Ke, Bo-Han Chen, Jhu-Lin Chen, Chen Jung Hsieh, Shao-Chuan Lee, Hsu-Chun Hsiao "Securing Data Planes in Software-Defined Networks," IEEE NetSoft 2016: 465-470