Po-Kai ‘Alex ’ Chang

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Education

M.S in Institute of Electrical Control Engineering,
National Chiao Tung University (NCTU), Taiwan. 05, 2019 ~ 2021

B.S. in Electrical and Computer Engineering,
National Chiao Tung University (NCTU), Taiwan. 09, 2016 ~ 2020

Research Interests

Robotic Vision, Image Recognition and Processing, Deep Learning.
Security Exploits, Non-Fungible Token Application, Decentralized Finance Consensus.
Cryptocurrency Financial Analysis.

Projects

Smart Contract and Back-End Developer for NFT Project “Katana N’ Samurai” 2021:

- **A short introduction**

This project has been prepared for half a year and is divided into two generations. The first generation will be sold in September 2021, a total of 2,000 samurais have been sold and the second generation will go on sale in January 2022.

The works are mainly in Ukiyo-e style. It is a traditional art famous in Japan back in 1700s, and we aim to bring this kind of historic art into the whole NFT market and spread Japanese culture.

In the future, a physical ramen shop will be unlocked in Taiwan after the sale. At the same time, with the growth of KNS members, we will gradually plan KNS-DAO, build a treasury, and support more artists to enter the NFT field to build a KNS ecosystem.

white paper

I am one of the three core members of this project, mainly responsible for technical development and marketing discussions such as roadmap. The development projects are mainly ERC-721 smart contracts and front-end and back-end concatenation tasks.

Smart Contract: NFT art to Ethereum chain, design of NFT samurai changing clothes mechanism, whitelist purchase mechanism.

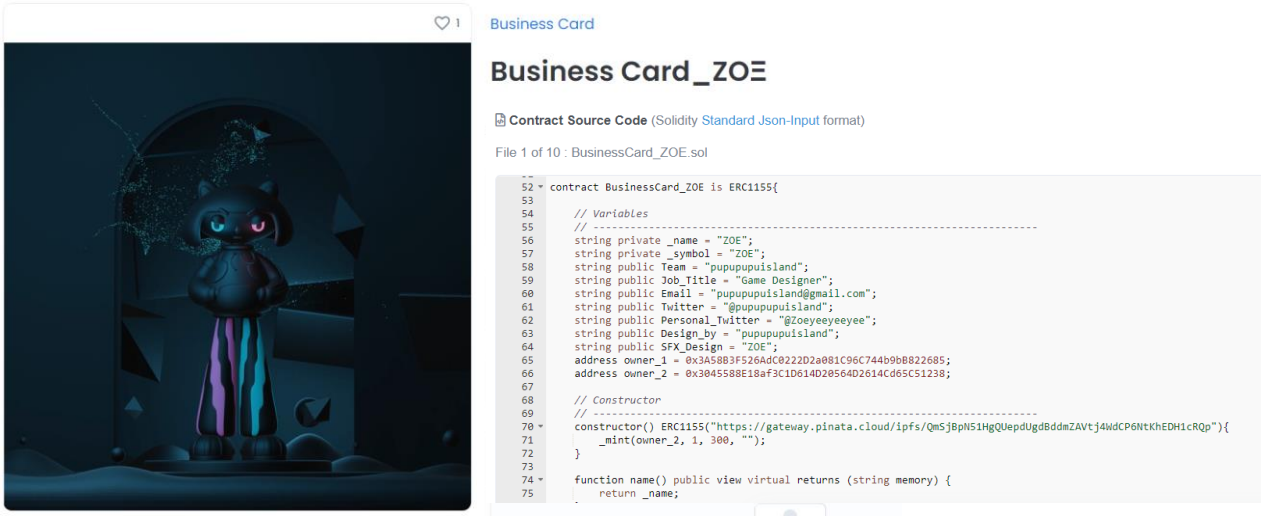
Front-end and back-end concatenation: use Fauna database to store metadata, front-end web buttons to interact with smart contract.

Business Card on the Ethereum Chain through the ERC-1155 Smart Contract 2021:

- **A short introduction**

I programmed to deploy business card information of the sandbox designer to the Ethereum chain through ERC-1155 smart contract. Achievement information is permanently saved.

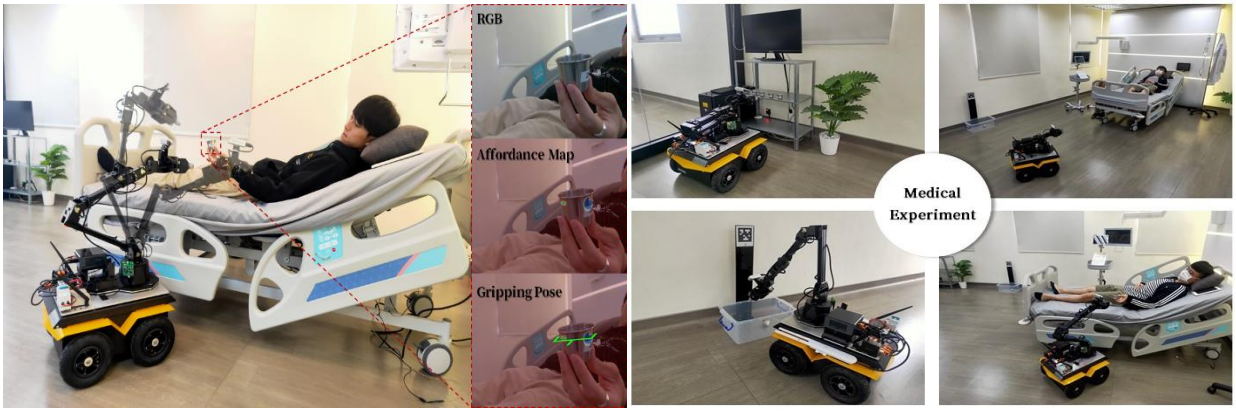
Allow the owner of the business card to arbitrarily send it to a specified person or the user can claim the business card to the owner.



Human-to-Robot Handover for the Medicine Delivery Robot System 2021:

- **A short introduction**

The recent COVID-19 outbreak has affected most countries, and motivated global efforts for developing robots to help the frontline medical staff. Our work aims at a medicine delivery task in the ward carried out by a mobile manipulator and the use of a single RGB-D camera mounted on the robot to achieve versatility.



Darpa Subterranean Challenge 2019~2020:

- **A short introduction for SubT**

  The "SubT" Challenge aimed to seeks a novel approaches to rapidly map, navigate, and search in underground environment automatically.

  Using UGV and UAV to do navigating, mapping and searching for the specific artifacts, which is lightless and hard to construct a fixed network system.

- **2019 Tunnel Circuit in Pittsburgh**

  In the team, I am responsible for Artifacts Searching. Using MobileNet SSD to predict artifact in tunnel.

- **2020 Urban Circuit in Seattle**

  In the team, I combined RGBD and thermal imagery to predict artifact with temperature.

  Design a dual stream model “ERFNet-FCN-Pix2Pix” and generate semantic segmentation with less noise.


Teaching Experience

- **Teaching Assistant,** Introduction to Artificial Intelligence (Fall 2019)
- **Teaching Assistant,** Human Centric Computing (Spring 2020)
- **Teaching Assistant,** Sensing and Intelligent System (Spring 2020)

Technical Skills

- **Programming:** C/C++, Python, JavaScript, Solidity.
- **Middleware and Libraries:** Robotic Operating System (ROS), OpenCV, Arduino, Pytorch.