Kai-Zhen Randy Liu

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EDUCATION

2018-2021   **National Taiwan University**

MSc Civil Engineering, Computer Aided Engineering

Relevant modules: Data Science for Engineering Applications, Interactive Computer Graphics, and Multimedium Computing Environment

Group Projects:

- Developed a game app called "Color Blind" that provides reaction competition with the color of the words and the color the words denote.

2014-2018   **National Cheng Kung University**

BSc Civil Engineering

RELEVANT EXPERIENCE

Aug 2019 – Present   Research Assistant, The Hong Kong Polytechnic University, Hong Kong

- Managed a project which focuses on a convenient collaboration system, "BIM-AR", for Structure Health Monitoring (SHM) of maglevs with National Rail Transit Electrification and Automation Engineering Technology Research Centre (Hong Kong Branch).
- Integrated and developed a Forge collaboration platform and AR app to provide Structure Health Monitoring of constructions and sensor localization.
- Assisted SmarTone to exchange physical data of on-site workers and the results of the ANN model with developing RESTFUL API.
- Validated an algorithm that aims to help workers adjust the rebar positions through AR devices by transform between as-built rebars and as-design rebars.

Nov 2019 – May 2020   iOS App Developer, Freelancer, Taiwan

- Developed an inspection App on the iOS platform providing different types of reports and sheets for on-site inspections.

July 2019 – Dec 2019   Grasshopper Developer, Freelancer, Australia

- Developed a graphical application for railway modeling to reduce the time of the frequent design changes by owners during the planning phase.

Feb 2019 – July 2020   Revit API Developer, NTU BIM Center, Taiwan

- Developed a system that automatically transforms BIM models to frame sections for the structural analysis and creates BIM rebar models based on the design results.

Sep 2018 – Jan 2019   Grasshopper Developer, NTU BIM Center, Taiwan

- Developed a graphical application for bridge modeling to reduce the time of the frequent design changes by owners during the planning phase.
- Developed a Civil 3D API to extract points of contour lines.

Sep 2018 – Jan 2019   HCI Developer, AirStructure Lab, Taiwan

- Developed the HCI mechanism of "On the Land Blowing" which aims to make the audience interact with the air and won 2nd prize in 2018 Taipei New Horizon Art Festival
- Analyzed the structure of scaffoldings of our works for exhibitions.

ADDITIONAL EXPERIENCE

Feb 2019 – Aug 2019   Teaching Assistant, National Taiwan University, Taiwan

- Implemented the training program of Revit API Programming and taught Microsoft SQL Server in the course, "Database and Practical BIM Application".

Sep 2018 – Feb 2019   Teaching Assistant, National Taiwan University, Taiwan

- Taught the students BIM technology and Revit modeling in the course, "BIM".

Mar 2017 – July 2017   Exchange Student, Tongji University, Shanghai, China

- Besides taking classes, interned in Shanghai Construction Group for designing parts of a high school and pathways of a nuclear power plant in China.

ADDITIONAL SKILLS

Technical and computing skills

- C++, C#, JavaScript, React.js, Node.js, Solidity, Swift, and Git
- Revit API, Grasshopper, Unity

Languages

- Mandarin – native speaker
- English – conversational

INTERESTS AND POSITIONS OF RESPONSIBILITY

2015 – 2016   Academic Department Representative, Student Association of Civil Engineering Department, National Cheng Kung University

- Liaised with research centers to provide students chances of understanding academic research methods and procedures of experiments more.
- Held salons to invite graduate students to share applications of computer-aided engineering which few professors taught before.