PEI-HSUAN (IKE) TSAI

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EDUCATION

2017 - 2018 **Cornell Tech at Cornell University**, New York, NY
- Master of Engineering in Computer Science
- Courses: Applied Machine Learning, Full-Stack Engineering (Startup Systems), Data Science, Virtual Reality, HCI

2010 - 2016 **National Taiwan University**, Taipei, Taiwan
- M.S. in Networking and Multimedia, *Advisor: Prof. Ming Ouhyoung*, **GPA: 4.0**, **NTU Outstanding Scholarship**
- B.B.A. in Management Information System & Creativity and Entrepreneurship Program
- Thesis: *Dome+: A Dome-Like Ultra Wide Field-of-View Head-Mounted Display System* **(Master Thesis Award)**
- Courses: Computer Graphics, Computer Vision, Cloud Services Design and Programming, Internet of Things

EXPERIENCE

2017 Fall **Bloomberg L.P.**, *iOS Developer (Cornell Tech Product Studio Project)* (JavaScript, React Native, iOS) [LINK]
- Developed a user-friendly matchmaking platform on iOS devices using React Native
- Recommended volunteering events for professionals based on interests and location using ML algorithms
- Designed and built Tinder-like user interface and rendered backend data with REST API

2015 Summer **Toppano Inc.**, *Part-Time Software Engineer* (JavaScript, three.js, gulp.js, HTML, CSS)
- Developed 360° panorama viewing system on mobile devices using three.js, allowing users to virtually walk through different panorama scenes with transition effects; integrated the gyroscope for rotation function
- Conducted a deep research into two 360° panorama projection algorithms and undistortion methods

2013 **Carpo**, *Co-Founder & Front-End Developer* (JavaScript, Node.js, HTML, CSS, Google Maps APIs) [LINK]
- Built the largest carpooling platform with 4000+ members and 500+ monthly active users, featuring ranking system and location-based service (Google Maps APIs)
- Achieved 200%+ growth rate in website traffic after running digital marketing campaigns using Google Adwords, Google Analytics, and focus group research

SELECTED PROJECTS

2014 - 2016 **Scope+** (**Best Demo Award** in **UIST**, HCI top conference) (Python, JavaScript, Unity, C#, 3D Printing) [LINK]
- Built the first augmented reality microscope system in the world used for surgical training with object tracking, interactive guidance, and remote control function for educational use
- Improved head-mounted display to get extremely high pixel density of 559.4 ppi in AR application
- Developed an image sharing function using Facebook Graph API and deployed the official website onto Amazon Web Services (AWS)

2015 - 2016 **Dome+** **(IICM 2016 Master Thesis Award)** (Python, JavaScript, three.js, Unity, C#, 3D Printing)
- Constructed dome-shaped VR headset with ultra wide field-of-view by integrating 9 panels display with camera calibration and new rendering methods
- Designed 3 VR applications with three.js and Unity; scraped Google Street View images with Python
- Conducted user research, which concluded that users were able to feel natural 3D effect without using binocular parallax

2014 - 2016 **3D Printing Project**, *Ministry of Science and Technology of Taiwan* (Python, Graphics, 3D Printing, C++)
- Developed GEAR module plug-in of open-source CAD software "FreeCAD" in Python for children to create and modify models for 3D printing in digital art classes
- Deployed CAD software on Github; currently used in digital art courses at two primary schools

PUBLICATIONS

July 2016 *A Modified Wheatstone-Style HMD Prototype for Narrow Field-of-View Video See-Through Augmented Reality*
- ACM SIGGRAPH 2016 Posters **(1st Author)**

Nov 2015 *Scope+ : A Stereoscopic Video See-Through Augmented Reality Microscope*
- ACM UIST 2015 Demonstrations **(Best Demo Award)** (3rd Author)
- ACM SIGGRAPH 2015 VR Village **(Immersive Realities Contest Top 10)** (3rd Author)

Nov 2015 *Video See-Through Augmented Reality Stereo Microscope with Customized Interpupillary Distance Design*
- ACM SIGGRAPH Asia 2015 Posters **(1st Author)**

SKILLS

Programming Python, JavaScript, C++, C, C#, Java, HTML, CSS, Matlab, LaTeX

Web/Mobile Node.js, three.js, React Native, jQuery, Bootstrap, Amazon EC2

Other Virtual Reality, Web Application, User Experience, GIT, Unity, Arduino, Prototyping, 3D Printing, Laser Cutting