



Jack Tsung-Yu Tsai

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EXPERIENCE

Snap Inc. – Seattle, WA

Research Engineer, *Aug 2019 – Present*

- Developed rapid prototypes with research scientists that resulted in 10 patents and invention disclosures
- Conducted the engineering of research projects and collaborated across teams to turn the research into products
- Engineered biometric messaging app “Significant Otter” that showcased biosignals sensing fostered social connections among partners, paper published in CHI 2021
- Integrated Snap’s flagship Bitmoji feature, biosignals sensing, activity recognition, and behavior prediction into messaging app “BFF” on iPhone and Apple Watch
- Launched 9 AR lenses on product platform to support social presence through authentic connections and collocated AR
- Mentored interns and junior engineers resulted in positive impact to their performance

Stitchbridge, Inc. – Pittsburgh, PA

Lead Engineer / Technical Director, *Jul 2017 – Jul 2019*

- Led engineering in the proprietary software tool for 85% faster building interactive live-action VR experiences
- Aligned designers and engineers to build interactive VR experiences for education and Industrial training
- Shipped 7 AR/VR cross-platform applications among clients on iOS, Android, Rift, Vive, Daydream, Gear VR, GO, Windows Mixed Reality
- Collaborated with Google Daydream team and Tribeca Film Institute for the immersive VR film “Haenyeo”
- Guided interns and juniors and cultivated an inclusive culture to shape an effective team

Oculus Research (now Facebook Reality Lab) – Pittsburgh, PA

Software Engineer, *Jul 2016 – Jul 2017*

- Researched with scientists closely in experimental projects and built the proprietary VR simulation system
- Aligned among the scientist and hardware teams for the spec of next-generation product
- Integrated the research results with multiple sensors and developed the functionality of VR simulation
- Demonstrated the simulation of research across the teams to explore the potential feature
- Benchmarked the performance of the research iteratively for the optimization of research integration

LOOT Interactive, LLC – Los Angeles, CA

Software Engineer, *June 2015 – Aug 2015*

- Collaborated with artists, engineers and producers in game porting from PC to Console (PS4, PS Vita, Xbox)
- Improved performance benchmark scores by 90% in critical gaming features, which was later launched in January 2016 (“Electronic Super Joy”)

Next Animation Studio – Taipei, Taiwan

R&D Engineer, *Oct 2009 – Jul 2014*

- Engineered a realistic facial simulation system for production pipeline with motion capture data
- Launched 2 iOS AR apps and created the AR system for real-time interactive animation in TV news (NHK, HKTV)
- Developed and maintained in-house game engine with DirectX API and plugin tools for the rendering improvement
- Programmed the shaders for cartoon effects, deferred rendering and BSP-tree with multithreading

SKILLS

- **Programming:** C/C++, C#, JavaScript, Objective-C, Swift, React, GLSL, HLSL, Python
- **SDK:** ARKit, RealityKit, Oculus SDK, OpenVR SDK, Maya API, 3ds Max SDK, Move.me SDK, Kinect SDK, V-Ray
- **Tools:** Unity, Unreal, Visual Studio, Xcode, Github, AWS, MATLAB, OpenGL, OpenCV, Maya, 3ds Max, Photoshop

EDUCATION

Carnegie Mellon University – Pittsburgh, PA

Master of Entertainment Technology, *May 2016*

National Taiwan University – Taipei, Taiwan

Master of Computer Science & Information Engineering, *Jun 2008*

- Graphics research group, Communication and Multimedia Lab

National Chung-Hsing University – Taichung, Taiwan

Bachelor of Computer Science, *Jun 2006*