HAOTIAN ZHENG

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Education

- **Central South University** Changsha, China
  Bachelor of Engineering, Computer Science and Technology (conferred in June, 2019) *Sept. 2014 – Jun. 2018*
  - **Course**: Algorithm Analysis and Design, Data Structure, Compiler Principle, Network, Object-Oriented Programming (C++), Java Language and System Design, Human-Computer Interaction, Artificial Intelligence, Pattern Recognition and Machine Learning, Computer Vision, Computer Graphics, Discrete Mathematics, etc
  - **Programming Language**: Objective-C (1100+ stars on GitHub, top 100 in China), C#, Java, JavaScript, Swift, Ruby
  - **Framework & Skill**: iOS, Android, Unity, Vue.js, Ruby On Rails, git, Adobe Suite, Sketch
  - **Honor**: Outstanding Collegiate Dissertation on Graduation Project, CSU

Professional Experience

- **rct studio** Beijing & Los Angeles
  Co-founder & Chief Engineer *Sept. 2018 - Jan. 2019*
  - **Research**: Studied possible solutions for serializable plot definition and management, semantic movie script language specification, and high-fidelity VR gameplays.
  - **Development**: Led the development of the interactive VR movie demo in Unity and the pipeline for movie scripts based workflows, including a REPL that transforms movie scripts into our in-house definition format and generates corresponding scene graphs in 3D applications like Unity3D or Cinema4D.
  - **Collaboration**: Working with other founders closely in order for the company to grow and raise fund. Projects of rct studio, now a YC W19 alumnus, were presented at the YC Demo Day and featured by TechCrunch.
- **Baidu** Beijing, China
  Unity Developer Intern in Smart Hardware BU *Mar. 2017 - Dec. 2017*
  - **Refactoring**: Rewrote the code base of the smart speaker I previously worked on at RavenTech (bought by Baidu) using Reactive Pattern (UniRx) for better readability and stability.
  - **Maintenance**: Wrote internal CI/CD tools in Unity Editor to automate documentation generation and build testing.
- **RavenTech** Beijing, China
  Full-stack Software Engineer Intern in RavenLab *Mar. 2016 - Sept. 2016*
  - **Prototyping**: Worked on various projects to validate internal ideas, including some iOS apps and a Unity GearVR product with custom built native plugins for native messaging and shared bitmap access, Leap Motion support with socket forwarding and a gaze based VR GUI system.
  - **Development**: Responsible for the audio visualization module on the Raven H-1 smart speaker graphical frontend using FFT calculation in Android and full-screen shaders in Unity.

Personal Portfolio (FinGameWorks)

- **Node Editor Framework**
  - **Research**: Designed and implemented a multi-purpose node editor GUI framework that can be used for visual scripting or storyline flow chart design.
  - **Application**: Initial framework was written in Objective-C for the WWDC 19 scholarship submission project (Creative Shader Programming). Later on the framework was ported to C# to be used in a board game engine I am still working on.
- **Live Wallpaper Series**
  - **Research**: Studied the internal of Unity engine and exploited the player to function as a live wallpaper on Android, macOS and Windows platforms, respectively using ApplicationContext, NSWindow and User32 API hacks.
  - **Application**: Skyline is an Android live wallpaper with global 3D terrain. It was the most paid app on Google Play (US region, 2018.1.22) and featured by tech sites including The Verge, LifeHacker, Android Authority and The Next Web. Also Vortex, a data-driven live wallpaper that visualize weather, time, and motion.

- **Unity Tooling**
  - **Development**: Developed various tools to meet my own needs that Unity itself didn't provide. Worked out several solution to integrate Unity instance into existing iOS projects for my out-sourcing clients, of which (1) involves Objective-C method swizzling and shell scripts to forward the implementation of UIApplicationDelegate from iOS side to Unity side, and (2) utilizes ruby scripts to modify the exported Unity Xcode project and turn it into a static framework or even a CocoaPod dependency.
- **Procedural Generation**
  - **Research**: Done some work on procedural planet generation in the development stages of Epoch Core and my final year project (GIS System) in CSU. Ported parts of libNoise to cg language to have parallel noise generation on GPU, making the process of height-map generation 50 times faster than the CPU only based solution.
- **Indie Development and Open Source**
  - **Indie Apps**: Published a handful of apps on both mobile and desktop platforms, including Product Hunt daily Top 4 GitHub Contributions(iOS) and Board For GitHub(macOS).
  - **Community**: Open-sourced some iOS UI components on GitHub to demonstrate how to achieve advanced UI and animation techniques (received 1100+ stars in total). Contributed (issue & pull request) to repos from Microsoft, Unity, JetBrains, and Mapbox.

Activities & Competitions

- **Wacom Connected Ink** Tokyo, Japan
  Session Speaker *Nov. 2019*
  - **Presentation**: Built a 3D modeling app using Wacom SDK and ARKit. The app, called 'Air Ink', made it to the final round of Inkathon and we were invited to make a presentation on the Wacom Connected Ink event.
- **Apple Worldwide Developers Conference 2018** San Jose, US
  Scholar *June. 2018*
  - **Scholarship**: Submitted a Swift Playground called 'Golf GO', which is a golf game wrote within 1000 lines but provides millions of maps at runtime using procedural algorithm. One of the 350 WWDC winner projects.
- **Apple Club of Central South University** Changsha, China
  Member & Tutor *Sept. 2017 - Mar. 2018*
  - **Volunteer**: Taught fellow students iOS development basics as a tutor. Covered Xcode usage, Objective-C, Foundation classes, MVC pattern, UIKit, and data persistence (NSUserDefault) with a note app as an example.

Awards & Honors

- **2nd place of MSRA & HNU HH Hackathon** Changsha, China
  Built an AR based wiki app that analysis the camera feed using object detection model and display virtual information card right on the scanned object.
- **1st place of IKODE IKEA Hackathon** Shanghai, China
  Built an AR based guide app for assembling IKEA furniture. We ranked the first and were offered the IKEA incubator program.
- **1st place of SegmentFault & AngelHack Hackathon** Shenzhen, China
  Built an AI voice bot that listens voice command and constructs mobile user interface for you.
- **3rd place of Uber API Hackathon** Beijing, China
  Developed a companion app for Uber travelers using Uber API, chatbot UI and location-based AR.
- **2nd place of China Academy of Art Hackathon** Hangzhou, China
  Developed an audio visualization app that uses OSC protocol to communicate with Max7 audio composing software.
- **1st place of SegmentFault Hackathon** Beijing, China
  Developed a marker based AR app using Vuforia that works like an AR version of ifixit.com. The app would recognize different models of MacBook and display 3D arrows pointing the corresponding repair location.

Other

- **Digital Art**: Do not participle in a professional matter, but hold a Dribbble player account with 16 shots and 200+ likes. Individually finished all icons, user interfaces, promo videos and marketing materials of my own apps. Published some of my own design work as free on Sketch App Sources.