HAOTIAN ZHENG

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Education Background

- **Central South University** Changsha, China
  Bachelor of Engineering in Computer Science and Technology (conferred in June 2019) *Sept. 2014 – June 2018*
  - **Coursework**: Computer Graphics, Human-Computer Interaction, Algorithm Analysis and Design, Data Structure, Object-Oriented Programming (C++), Java Language and System Design, Artificial Intelligence, Pattern Recognition and Machine Learning, Computer Vision, Compiler Principle, Computer Network, Discrete Mathematics, etc
  - **Programming Language**: Objective-C (1100+ stars on GitHub, top 100 in China in this category), C# (40k LOC), Java (20k LOC), JavaScript, Swift, Ruby
  - **Framework & Skill**: iOS, Android, Unity, Vue.js, Ruby On Rails, git, Adobe Suite, Sketch
  - **Honor**: Outstanding Collegiate Dissertation on Graduation Project (*GIS Planet System Design and Implementation using Unity Engine*), 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**: Cooperated closely with other founders for the company to grow and raise funds. Presented projects of rct studio, now a YC W19 alumnus, at the YC Demo Day (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 (later acquired by Baidu) using Reactive Pattern (UniRx) for better readability and stability.
  - **Maintenance**: Wrote internal CI/CD tools in Unity to automate documentation generation and build testing.
- **RavenTech** Beijing, China
  Full-stack Software Engineer Intern in RavenLab *Mar. 2016 - Sept. 2016*
  - **Prototyping**: Supported in 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**: Took charge of the audio visualization module on the Raven H-1 smart speaker graphical frontend using FFT calculation in Android and full-screen shaders in Unity.

Indie Portfolio (FinGameWorks)

- **Node Editor Framework** *Mar. 2019 - June 2019*
  - **Research**: Designed and implemented a multi-purpose node editor GUI framework that can be used for visual scripting or storyline flow chart design.
  - **Application**: Submitted initial Objective-C based framework for the WWDC 19 Scholarship Project (Creative Shader Programming). Ported the framework to C# for further application in a board game engine I am working on.
- **Live Wallpaper Series** *Dec. 2017 - Feb. 2019*
  - **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, an Android live wallpaper with global 3D terrain which ranked the most paid app on Google Play (US region, Jan. 2018) and was covered by tech sites including The Verge, LifeHacker, Android Authority, and TNW. Vortex, a data-driven live wallpaper that visualizes weather, time, and motion.

- **Unity Tooling** *Oct. 2016 - Mar. 2018*
  - **Development**: Developed various tools to meet my own needs that Unity itself didn't provide. Worked out several solutions 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** *Aug. 2016 - July 2018*
  - **Research**: Investigated 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** *Oct. 2015 - Jan. 2019*
  - **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.

Conferences & Services

- **Wacom Connected Ink** Tokyo, Japan
  Session Speaker *Nov. 2019*
  - **Presentation**: Built a 3D modeling app called 'Air Ink' with Wacom SDK and ARKit, which reached the final round of Inkathon. Presented technical key points on the Wacom Connected Ink event in Japan.
- **Apple Worldwide Developers Conference 2018** San Jose, US
  Scholar *June 2018*
  - **Scholarship**: Submitted a Swift Playground called 'Golf GO', a golf game written within 1000 lines but provides millions of maps at runtime using procedural algorithms. Granted as 1/350 WWDC winner projects globally.
- **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.

Honors & Awards

- **2nd Place for MSRA & HNU HH Hackathon** Changsha, China
  Built an AR based wiki app that analyzes the camera feed using object detection model and displays virtual information card right on the scanned object.
- **1st Place for IKODE IKEA Hackathon** Shanghai, China
  Built an AR based guide app for assembling IKEA furniture and was offered IKEA incubator program.
- **1st Place for SegmentFault & AngelHack Hackathon** Shenzhen, China
  Built an AI voice bot that recognizes voice commands and constructs mobile user interface for users.
- **3rd Place for Uber API Hackathon** Beijing, China
  Developed a companion app for Uber travelers using Uber API, chatbot UI and location-based AR.
- **2nd Place for China Academy of Art Hackathon** Hangzhou, China
  Developed an audio visualization app that communicates with Max7 audio composer using OSC protocol.
- **1st Place for SegmentFault Hackathon** Beijing, China
  Developed a marker based AR app using Vuforia that works like an AR version of ifixit.com and enables to recognize different models of MacBook and display 3D arrows pointing the corresponding repair location.

Other Information

- **Digital Art**: Held 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 design work as free on Sketch App Sources.