

# Daohang (Tony) Tong

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## EDUCATION

### The University of Texas at Austin

Jan 2022 - Jan 2024

Master of Computer Science Online (with a focus on ML)

### University of California, Irvine

Sep 2016 - Sep 2020

Double Majors: B.S. Computer Science, B.S. Physics

Honor: Deans List for Academic Year 2016-2017 and 2018-2019; Phi Beta Kappa, Sigma Pi Sigma, Eta Kappa Nu

## SKILLS

**Programming Languages:** Python, C/C++, Swift, TypeScript/JavaScript, Bash Shell, Haskell, Mathematica

**Tools:** Cocoapods, Swift Package Manager, iOS APIs (CoreData, AVFoundation, CallKit, APN, URL Session), PyTorch, Tensorflow, Docker, Django, React, React Native, AWS (EC2, S3, SageMaker, Braket), GCP, Firebase (FCM), MongoDB, Root,  $\text{\LaTeX}$

## WORK EXPERIENCE

### Lead iOS Developer

Anaheim, CA

*AiTmed - Supervisor: Austin Yu*

July 2021 - Present

- Developed 2 ECC end-to-end (e2e) encrypted apps for users to give/receive medical care with features such as medical notes with macro, telemedicine conferencing, bluetooth medical devices connection, and secure auto-login
- Architected a cross-platform frontend framework on iOS using swift MVVM and multi-threading with RxSwift
- Retrieved data from the backend with gRPC and improved the efficiency with multi-level frontend cache
- Optimized the app's memory footprint and API payload size by compressing images and heap profiling
- Built a push notification system with FCM and APN with click-to-jump and ringtone support to improve usability
- Led a team of 4 developers to coordinate engineering effort, working closely with the design and QA team
- Improved CI/CD tooling with bash script and unit testing, saving at least 4 hours per deployment

### Co-Founder/Lead Machine Learning Engineer & iOS Developer

Irvine, CA

*Digerini - Partner: Richard Brazill*

Jan 2021 - Present

- Invented key algorithms for a patent application to battle against phone call scams; Responsible for architectural road-maps for both ML and full-stack app; Launched MVP to iOS TestFlight in 1 month
- Developed an iOS app with React Native and Python Django with MongoDB deployed on AWS
- Built a Prototypical Dilated Convolutional Neural Network to perform few-shot learning on audio data
- Led a team of five developers with Agile Scrum; Expanded the team and mentored the junior engineers

### Jr. Specialist

Irvine, CA

*UCI & CERN ATLAS - Advisor: Prof. Daniel Whiteson*

Sep 2020 - Present

- Co-authored *Learning to Identify Electrons*, improved SOTA by 3% with CNNs, accepted in [Physical Review D](#).
- Automated the data generation and monitoring pipeline on a cluster with Python, speeding up the process by 10x
- Constructed group equivariant neural network with symmetry constraints to be more efficient and interpretable

### Deep Learning Engineer Intern

Irvine, CA

*Fixstars Solutions - Supervisor: Takuro Iizuka*

Apr 2019 - Jun 2019

- Computed the 13 measurements (e.g. distance between cars) in CARLA simulator with Python and C++; developed a command line interface to automatically collect data ([fixstars/ALUAD](#))
- Developed multiple deep neural networks using PyTorch and distributed them on GPU clusters
- Computed various measurements in CARLA simulator with Python and C++; developed data collection CLI

## PROJECTS & ACTIVITIES

*2021* Constructed a quantum enhanced GAN for HEP which was ranked top 20 in [QHack](#), awarded \$4000 AWS credits

*2020* Completed all tasks in 2nd IBM Quantum Challenge; ranked top 10% among 1000+ participants

*2019* Made a Web app to visualize UCI course schedule and send a email notification when the course is available

Built and trained an agent to navigate in Minecraft with generative adversarial imitation learning

Developed a React-Native app to evaluate students' mental health and recommend activities to cheer them up

*2018* Implemented an intelligent quiz app with Python and ReactJS which supports online editing, publishing quiz, generating printed exam and analyzing students' data which was used by 300+ students

Ranked #19 in IEEEExtreme Competition, U.S. (top 5% worldwide out of 4049 teams)