

# Daohang (Tony) Tong

(949) 247-1233 ◊ work@tdhttt.com ◊ Los Angeles, CA, 90017 ◊ tdhttt.com ◊  TDHTTTT

## EDUCATION

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### 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

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

**Tools:** Cocoapods, Swift Package Manager, iOS APIs (DispatchQueue, CoreData, AVFoundation, CallKit, APN, URL Session), PyTorch, Tensorflow, Docker, Django, React, React Native, AWS (EC2, S3, SageMaker, Braket), GCP, Firebase (Messaging), MongoDB, Root, L<sup>A</sup>T<sub>E</sub>X

## WORK EXPERIENCE

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### 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 telemedicine conferencing with auto-disconnect, personal index for fuzzy search, and secure password reset
- Architected a cross-platform frontend engine on iOS using swift MVVM to parse and run a customized UI description language
- Enabled concurrency with DispatchQueue and RxSwift; debugged and fixed thread-unsafe data handling issues
- Used gRPC to retrieve data and improved loading speed by 40% with multi-level frontend cache with NSCache and SQLite
- Optimized the app's memory footprint and by 52% with heap profiling, image compression and view controller management
- Built a push notification and VoIP callkit system with FCM and APNs with click-to-jump to improve the user experience
- Led a team of 4 developers to coordinate engineering effort and the design team to deliver >3 new features/week
- Improved CI/CD tooling with bash scripts, git submodule 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 that are deployed on AWS
- Built a prototypical dilated convolutional neural network to perform few-shot learning on audio data to replace SOTA
- Led five developers with Agile Scrum; Sped up team onboarding by 50% with automated documentation from annotated code

### Jr. Specialist

Irvine, CA

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

July 2020 - July 2021

- 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

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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)