Chung-Hao Huang

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EDUCATION

**PhD in Graduate Institute of Electronics Engineering**

National Taiwan University

2008-2016

**Bachelor in Electronics Engineering**

National Taiwan University

2003-2007

MAJOR GRADUATE SCHOOL PROJECTS

* SW Testing on Android APPs
  + Auto test case generating tool with GUI object identification
  + Tool to extract specific behavior which causes anomalies by applying data mining in test results
  + Black box memory leakage and code coverage detection with deassamble technique
* Temporal Logic and Game Theory
  + Use game theory concept to measure software resilience against dense errors
  + Extend CTL(Computation Tree Logic) and ATL(Alternating-time Temporal Logic) with strategy interaction semantic
  + Mining temporal specification of anomaly user pattern

PUBLICATIONS

* Journal
  + [IEEE Trans. SW 2016] A Game-Theoretic Foundation for the Maximum Software Resilience against Dense Errors
  + [ACM Toplas 2015] An Extension of ATL with Strategy Interaction
* Conference
  + [CAV 2014] G4LTL-ST: Automatic Generation of PLC Programs
  + [TACAS 2013] Model-Checking Iterated Games
  + [APLAS 2013] Temporal Specification Mining for Anomaly Analysis
  + [GandALF 2012] Rapid Recovery for Systems with Scarce Faults
  + [CONCUR 2011] A Temporal Logic for the Interaction of Strategies
  + [FASE 2011] Evolving a Test Oracle in Black-Box Testing

TECHNICAL SKILLS

* Android APP implementation
  + BLE, Bluetooth API
  + Google MAP, Google Direction API
  + self-defined REST API
  + TCP/UDP protocol to connect to IoT devices
  + Gesture control using 3rd party SDK
  + Unity APP with 3rd party BLE library
  + sqlite with MVC
  + save GPS location in GPX format
* LAMP or Django backend server and REST API
* Experience in NP-complete, PSPACE-complete, EXPTIME-complete algorithm implementation with C, C++ or python
* X86 architecture and UEFI bios basic concept
* Experience in parser generator (lex, yacc, ply, ANTLR, pyparsing) experience while implementing building tool chain

WORK EXPERIENCE

**2015 - 2017, ChaseWind Co. Ltd, Co-founder & CTO**

ChaseWind is a startup company which is building HUD smart glasses and corresponding service for cyclist.

I worked for ChaseWind as CTO and co-founder. My major task is to define the software spec of the Android APP on the glasses, the Android/iOS APP on smart phone and the REST API that the server should provide. Since I am also the only Android developer in the team, I have to implement the APP by myself.

Here are some features of the APPs I implemented:

* APP on the glasses:
  + Be connected by the APP on smart phone through Bluetooth
  + Show turn by turn navigation indications given by the phone APP
  + Show sensor data given by the phone such as heartrate, cadence, speed, etc.
  + Let user control the display mode by gesture
* APP on the phone:
  + Login to our server and get token
  + Scan and connect to BLE GATT sensors
  + Let user setup destination with Google Map API
  + Get routes from Google Direction API
  + Transfer sensor, GPS, and navigation data to the APP on the glasses

All the features are either already integrated in to our production version of APP or at least be verified with an POC demo APP. I have to co-work with hardware team and BSP engineer to make sure the required API or JNI SDK are supported by the platform. Besides the engineer part, I also in charge of our IP and financial plan to maintain and collaborate with potential supplier investor.

Recognitions in ChaseWind:

* 2017 Plug and Play, Sunnyvale - International program
* 2017 MWC, Barcelona - Exhibitor
* 2016 Bluetooth SIG Breakthrough Awards - Finalist

**2016, Jorjin Technologies Inc., SW Engineer**

As an SW engineer in Jorjin, I surveyed the application requirements of AR glasses from different verticals such as medical, fire fighters, security guards, pipeline workers, etc. And once the SW spec had been finalized, I implemented demo APPs to demonstrate the capability of HW platform.

**2014 - 2016, Intel PC BIOS team, Intern**

I implemented some tools in the BIOS building tool chain and integrated the tool into CI system to improve the quality of code. Most of the tools are parser-based python script which can fix the code formatting, verify memory alignment, check binary compatible between versions. I also have to cooperate with the tool team in other groups to create a wide-used tool to clean the confidential content in the code. Besides implementing tools, I also have some chance to help engineers to maintain BIOS code or help to implement POC of new features.

**2013, FORTISS GMBH, Intern**

Help designing and implementing logic synthesis tool to generate PLC code from LTL spec.

**2011 - 2012, Intel Innovation center(embedded), Intern**

In Intel Innovation Center, I reviewed the IP in the production code, maintain the server of remote testing platform, design automatic test cases for digital signage or POS printing system.

**2009 - 2016, Freelancer**

Following are short descriptions of some cases:

* Aquarium Light(Android): Control the light to turn on/off or change color through UDP packet.
* Attendance Management System(Android): Basic attendance management Android APP with sqlite
* Hospital Information System(JAVA): Registration/Admission/Payment/Case/Medicine management system in Java Hibernate framework