# Dr. Tsung-Wei Huang

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### EDUCATION

**PhD** – ECE dept., University of Illinois at Urbana-Champaign, IL, US2013/08-2017/12

**BS/MS** – CS dept., National Cheng Kung University, Tainan, Taiwan2006/09-2011/06

### RESEARCH INTERESTS

* Computer Systems, Parallel/Distributed Computing, Machine Learning, Electronic Design Automation

SELECTED AWARDS

* 1st Place, 2nd Place, and 1st Place, TAU Timing Analysis Contest, 2014-2016
* Yi-Min Wang and Pi-Yu Chung Endowed Research Award, ECE Dept., UIUC, 2016
* Rambus Computer Engineering Fellowship, ECE Dept., UIUC, 2015-2016
* 2nd Place and 1st Place, ACM/SIGDA CADathlon International Programming Contest, 2014 and 2017
* 2nd Place, ACM Student Research Competition Grand Final, ACM Annual Award Banquet, 2011
* 1st Place, ACM Student Research Competition, ACM/IEEE Design Automation Conference, 2010
* 3rd Place, National Collegiate Programming Competition, Ministry of Education, Taiwan, 2009

### RESEARCH PROJECTS

**Biochips** – CAD for microfluidic-based biological analysis 2010/04–2013/08

* Develop algorithms to speed up the microfluidic lab-on-a-chip design and analysis
* Research works published in IEEE/ACM ICCAD, IEEE/ACM DAC, and IEEE TCAD

**OpenTimer** – An open-source high-performance timing analysis tool (GPL) 2014/08–Present

* An academic static timing analysis tool written in modern C++ for timing VLSI systems
* Top-3 winners in TAU 2014-2016 contests, golden timer in ICCAD 2015 and TAU 2016-2017 contests
* Research works published in IEEE/ACM ICCAD, IEEE/ACM DAC, and IEEE TCAD

**DtCraft** – An open-source cluster computing engine (MIT) 2015/08–Present

* A new programming model for building high-performance distributed applications using C++17
* 10-50x faster than existing cluster computing systems, Spark and Hadoop, on machine learning
* Research works published in IEEE/ACM ICCAD

### PUBLICATION RECORD

* >20 top-tier conference papers (ICCAD, DAC) and 8 top-tier journals (TCAD)

### SKILLS

**Language** – C++03/11/14/17 (★★★★★), Python (★★), Scala (★), etc.

**Programming** – Linux system programming, network programming

**Libraries** – Spark, Mesos, Kafka, Libevent, TensorFlow, Boost, GTest, LXC, MPI, OpenMP, etc.

### WORK EXPERIENCE

**Software Engineer Intern** – High-performance Computing Group, Citadel, Chicago 2017/06–2017/08

* Develop machine learning toolbox with TensorFlow to support QR workload
* Return offer for software rotation program

**R&D Research Intern** – System and Technology, IBM, Fishkill, NY 2015/05–2015/08

* Research on distributed timing analysis using Spark, and Linux network programming
* Filed a patent on incremental pessimism reduction, US 9836572 B2, 12/05/2017

**R&D Research Intern** – Timing Group, Mentor Graphics, Fremont, CA 2014/05–2014/08

* Research on parallel timing analysis at billion scale