Dr. Tsung-Wei Huang
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EDUCATION

PhD – ECE dept., University of Illinois at Urbana-Champaign, IL, US 2013/08-2017/12
BS/MS – CS dept., National Cheng Kung University, Tainan, Taiwan 2006/09-2011/06

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