CHIEN-CHIN HUANG

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Education

2013–Present **Ph.D, Computer Science**, *New York University*.
- Advisor: Dr. Jinyang Li
- Research Topic: Distributed Systems, especially in Distributed Programming Frameworks.

2005–2007 **M.S., Computer Science**, *National Tsing Hua University*.
- Advisor: Dr. Jenq-Kuen Lee
- Thesis Topic: Microkernel Design and Dual-core Supports for PAC VLIW DSP Processors.

2001–2005 **B.S., Computer Science**, *National Tsing Hua University*.

Research Interests

Distributed computing, file system, embedded software and algorithm design.

Publications

Fast Image Clustering on Network of Mobile Phones.
Jorge Ortiz, Chien-Chin Huang, Supriyo Chakraborty.
ICML 2016 Workshop for On-Device Intelligence

Get More With Less: Near Real-Time Image Clustering on Mobile Phones.
Jorge Ortiz, Chien-Chin Huang, Supriyo Chakraborty.
Arxiv, 2015

Spartan: A Distributed Array Framework with Smart Tiling.
Chien-Chin Huang, Qi Chen, Zhaoguo Wang, Russell Power, Jorge Ortiz, Jinyang Li, Zhen Xiao.
USENIX Annual Technical Conference, July 2015

Garbage Collection for Multiversion Index in Flash-based Embedded Databases.
Po-Chun Huang, Yuan-Hao Chang, Kam-Yiu Lam, Jian-Tao Wang, Chien-Chin Huang.
ACM Transactions on Design Automation of Electronic Systems, June 2014

Enhancing Microkernel Performance on VLIW DSP Processors via Multiset Context Switch.
Brian K. Hsieh, Yung-Chia Lin, Chien-Chin Huang, and Jenq Kuen Lee.
Journal of Signal Processing Systems, Vol. 51.

Integrating compiler and system toolkit flow for embedded VLIW DSP processors.
Chi Wu, Kun-Yuan Hsieh, Yung-Chia Lin, Chung-Ju Wu, Wen-Li Shih, Shih-Chang Chen, Chung-Kai Chen, Chien-Ching Huang, Yi-Ping You, Jenq Kuen Lee.
IEEE International Conference on Embedded and Real-Time Computing Systems and Applications, 2006.

Research Projects

2016-present **Tofu: Distributing Tensor Computation Automatically for Large-scale Machine Learning**.
Tofu is a framework to parallelize machine learning applications, especially deep learning, automatically.

2014-2015 **Spartan: Distributed Array Programming Framework**.
Spartan is a distributed array framework which provides several data-flow high-level operators to help users to implement distributed array programs. The 'key' for these operators is 'extent' which is a data structure representing the shape and location of the 'value', a 'tile' (sub-array). Spartan also contains more than 50 Numpy-like built-in APIs which implemented by the high-level operators.

2012-2013 **MVBT Flash: Multi-Version B-Tree Database for Flash Device**.
The project is to build a database based on multi-version b-tree on Flash devices. The major challenge of the idea is the out-place update property of Flash devices. Whenever a leaf has been updated, it will trigger all its ascendents to be updated and results in huge amount of outdated/invalid pages. A efficient garbage collection has been proposed to solve the issue.

Honors, Awards and Grants

2015 **ATC'15 Student Travel Grant**.

2014 **OSDI'14 Student Travel Grant**.

2007 **1st Place**, *Best Thesis Award*, Institute of Information Computing Machinery, Taiwan.

2006 **1st Place**, *Embedded System Design Contest*, Ministry of Education, Taiwan.

2006 **Selective Preference**, *SiliconAward, Embedded Software Group*, MXIC Inc..

2004 **7th Place**, *ACM International Collegiate Programming Contest (ICPC)*, Kaohsiung Station.

Professional Experience

2016 **Summer Software Engineer Intern**, *Google Inc.*, Mountain View, CA, USA.

2015 **Summer Research Intern**, *IBM T.J. Watson Research Center*, Yorktown Heights, NY, USA.

2013–Present **Research Assistant**, *New York University*, New York, NY, USA.

2012–2013 **Research Assistant**, *Institute of Information Science, Academia Sinica*, Taipei, Taiwan.

2001–2012 **Senior Software Engineer**, *MediaTek Inc.*, Hsinchu, Taiwan.

2008–2011 **Software Engineer**, *MediaTek Inc.*, Hsinchu, Taiwan.

2005–2007 **Graduate Research Assistant**, *National Tsing Hua University*, Hsinchu, Taiwan.