

Renshen Wang

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Education

University of California, San Diego

Ph.D., Computer Science and Engineering, expected 2009

- Advisor: Professor Chung-Kuan Cheng
- Area of study: Combinatorial algorithms on computer-aided design
- GPA: 3.75/4.0

University of California, San Diego

M.S., Computer Science, April 2007

- GPA: 3.75/4.0

Tsinghua University, Beijing

B.E., Computer Science, June 2005

- GPA: 85/100

Research and Work Experience

UCSD CAD Lab, *Research assistant*, 09/2005 - present

- Computational complexity on mapping graph topologies into 3-D cuboidal contact relations, and comparison with traditional 2-D rectangular contact relations applied in current integrated circuit design
- Low power bus architectures for system-on-chip (SoC) by shortest-path Steiner-graph synthesis
- 3-D floorplan encoding schemes for 3-D bin packing optimization
- Minimization on number of layers in escape routing of multi-level electronics packaging
- Nonlinear optimization on transmission line for circuit interconnection design

UCSD CSE, *Teaching assistant*, 03/2009 - 08/2009

- CSE140 Components and Design Techniques for Digital Systems
- CSE140L Digital Design Systems Labs
- CSE141 Computer Architecture

Broadcom Corporation, *Summer intern*, 06/2008 - 09/2008

Bluetooth Lab, San Diego

- Standardization of design documents (referring to IP-XACT by the Spirit consortium)

NEC Corporation, *Fall intern*, 10/2007 - 12/2007

System and IP Core Research Laboratories, Kawasaki, Japan

- Symmetrical buffer placement in zero-skew clock trees

Mentor Graphics Corporation, Summer Intern, 06/2006 - 09/2006

R&D Group of Advanced JED, San Jose

- Re-distribution layer routing based on grid network and min-cost network flow

Publications

- Renshen Wang, Nan-Chi Chou, Bill Salefski and Chung-Kuan Cheng. Low Power Gated Bus Synthesis using Shortest-Path Steiner Graph for System-on-Chip Communications. *ACM/IEEE Design Automation Conference*, 2009
- Renshen Wang and Chung-Kuan Cheng. On the Complexity of Graph Cuboidal Dual Problems for 3-D Floorplanning of Integrated Circuit Design. *ACM Great Lake Symposium on Very-large-scale Integration*, 2009
- Renshen Wang and Chung-Kuan Cheng. Octilinear Redistributive Layer Routing in Bump Arrays. *ACM Great Lake Symposium on Very-large-scale Integration*, 2009
- Renshen Wang, Takumi Okamoto and Chung-Kuan Cheng. Symmetrical Buffer Placement in Clock Trees for Minimal Skew Immune to Global On-chip Variations. *IEEE International Conference on Computer Design*, 2009
- Renshen Wang, Evangeline F. Y. Young and Chung-Kuan Cheng. Representing Topological Structures for 3-D Floorplanning. *IEEE International Conference on Communications, Circuits and Systems*, 2009
- Ling Zhang, Wenjian Yu, Yulei Zhang, Renshen Wang, Alina Deutsch, George A. Katopis, Daniel M. Dreps, James Buckwalter, Ernest S. Kuh and Chung-Kuan Cheng. Low Power Passive Equalizer Design for Computer Memory Links. *Hot Interconnects 2008*: 51-56
- Renshen Wang, Evangeline F. Y. Young, Yi Zhu, Fan Chung Graham, Ronald Graham and Chung-Kuan Cheng. 3-D Floorplanning Using Labeled Tree and Dual Sequences. *ACM International Symposium on Physical Design*, April 12-16, 2008
- Renshen Wang, Rui Shi and Chung-Kuan Cheng. Layer Minimization of Escape Routing in Area Array Packaging. *IEEE/ACM International Conference on Computer-Aided Design*, November 5-9, 2006
- Shaomei Wu, Renshen Wang and Jiabin Wang. Campus Virtual Tour System Based on Cylindric Panorama. *International Conference on Virtual Systems and Multimedia*, Ghent, October 2005
- Renshen Wang, Sheqin Dong and Xianlong Hong. Buffer Space Planning for Long Interconnections. *IEEE International Midwest Symposium on Circuits and Systems*, Ohio, August 2005
- Renshen Wang, Sheqin Dong and Xianlong Hong. An Improved P-admissible Floorplan Representation Based on Corner Block List. *IEEE/ACM Asia and South Pacific Design Automation Conference*, Shanghai, January 2005.

Honors & Awards

- 1st place in Fall 2005 UCSD Programming Contest
- Silver Medal (19th) in National Olympiad in Informatics, Macau, China, 2000
- 2nd place in ACM/ICPC programming contest Shanghai regional, 2001
- 5th place in ACM/ICPC programming contest Xian regional, 2002
- Team champion of “Ma Johan Cup” I-Go contest, Tsinghua University, 2004
- Multiple scholarships in Tsinghua University (Beijing) from 2002 to 2005

Skills & Computer Experience

- *Programming*: C/C++ 8 yrs, Matlab 2 yrs, Perl 1 yr, Java 2 yrs, Pascal 3 yrs, Assembly 1 qtr, Objective C starting
- *Operating systems*: Linux, Unix, Windows 95-2000/XP/Vista, Mac OS and iPhone OS
- *Technical writing & presentation*: Latex, Microsoft Word and PowerPoint

Self-motivated Projects

- **Knapsack** (on the iPhone App Store) Based on the classic knapsack problem, the objective is simplified. Easy drag-and-drop operations are used on the iPhone touch screen, combined with self made artworks.

References

Available upon request