

Kai Hwang (黄铠)

Biographical Sketch and Achievements

(updated Oct.30, 2017)

Kai Hwang is a world-renowned scholar in computer systems, Internet security, and cloud computing. He earned the Ph.D. in EECS from U.C. Berkeley in 1972. He has taught at Purdue University for 11 years before joining USC in 1985. He has been serving as a Professor of Electrical Engineering and Computer Science at USC for 32 years. His key research contributions include scalable multiprocessors, vector supercomputers, and distributed systems like clusters, grids, P2P networks, datacenters, and cloud platforms.



Specifically, Dr. Hwang's teams at Purdue and USC have developed the orthogonal multiprocessor architecture, built fault-tolerant Linux clusters, benchmark evaluated many supercomputers and public clouds, and secured the grid, P2P, cloud and IoT systems with intrusion detection, trust management and reputation systems. He has taught many advanced courses at Purdue, USC, THU, HKU, and ZHU, on computer architecture, big-data analytics, cloud computing, mobile and IoT integration with social networks and healthcare systems. He has also served as a visiting chair professor at Tsinghua Univ. and Hong Kong Univ., etc. For details of his academic achievements, visit his personal home page given below.

Scholarly Publications and Contributions:

- Over the years, Dr. Hwang has published 10 scientific books and over 250 research papers mostly in IEEE Transactions and Conferences. According to Google Scholars, his works were cited over **16,901** times with an **h-index of 55** and **i10-index of 158** as of today. He was listed with distinction as one of the mostly cited faculty researchers on USC campus.
- His best paper: "PowerTrust for Scalable P2P Computing" was cited **798 times**. His recent works have attracted **4,758 citations** in the last 5 years. His accomplished works have impacted the industrial growth of fast search engines, pervasive use of datacenters and clouds, and reputation systems for protecting social networks.
- He has consolidated the computing and Internet arena by producing a series of graduate-level textbooks.). His classic book: *Computer Architecture and Parallel Processing* (1983) was cited **2,556 times**. His book with Dongarra and Fox: *Distributed and Cloud Computing: From Parallel Processing to Internet of Things* has won the best academic title by the American Library Association in 2012
- In 2017, Dr. Hwang has two new books published: *Cloud Computing for Machine Learning and Cognitive Applications* (The MIT Press, 601 pages) and *Big Data Analytics for Cloud/IoT and Cognitive Computing* (Wiley, 410 pages). These two books consolidate his past 10 years of frontier research and updated teaching achievements at USC, THU, etc. The Chinese translation of these two books will appear in early 2018. His textbooks were translated into Chinese, Spanish, Japanese, and Korean languages from the English editions and benefitted over 3 millions of readers/students worldwide.

Leadership Roles and Academic Impacts:

- Hwang has played many leadership roles in higher education and high-performance computer industry. He cofounded and served as the Editor-in-Chief of the *Journal of Parallel and Distributed Computing* (JPDC) for 28 years. He has recruited 250 subject-area editors (SAEs) for JPDC. Five SAEs of JPDC were elected, into the US National Academy of Engineering, subsequently.
- Besides JPDC, Hwang has also served on the editorial boards of IEEE *Trans. TPDS, TCC, TSC* and the *Journal of Big Data Intelligence*. He has graduated 21 Ph.D. students from USC and Purdue. Among them, 4 were elected IEEE Fellows, one IBM Fellow, and two joined the Chinese Academy of Science.
- He has lectured worldwide and performed advisory/consulting work with IBM, Intel, JPL, MIT Lincoln Lab, INRIA in France, ETL in Japan, and Academia Sinica. Several of his Ph.D. students and post-doctoral associates became CTO or leaders in computer industry, VP of research universities, and members of Chinese National Academy of Engineering.

Awards and Professional Recognitions:

- Dr. Hwang was elevated to *IEEE Fellow* by Computer Society in 1986. He is now a Life Fellow of IEEE. He has received the *Lifetime Achievement Award* from *IEEE CloudCom* in 2012 for his pioneering contributions to parallel and distributed computing.
- He received the *Founder's Award* from *IEEE IPDPS* in 2011. He has received the *Outstanding Achievement Award* in 2004 from China Computer Federation (China's counterpart of Computer Society)
- He has chaired many IEEE/ACM International Conferences and delivered 4 dozens of keynote talks in IPDPS, HPCA, ISCA, ICPP, Cluster, CloudCom, COMPAR, etc. This year, he was nominated as a candidate for the US National Academy of Engineering. For this nomination, he was cited for his outstanding contributions in parallel and distributed computing, scalable clusters, and big data analytics in cloud applications.
- During his sabbatical years, he has served as **visiting chair professors** at Hong Kong University, Tsinghua University, University of Minnesota, and National Taiwan University. In 2008, he has also served as a **chief scientist** at the Institute of Computing Technology, Chinese Academy of Sciences.

Point of Contact:

Dr. Hwang can be reached via Email: kaihwang@usc.edu all the time. In the USA, he can be reached by his personal cell phone: **+1-909-569-8805**. While traveling in China, call or leave message with his cell phone: **+86-186-1099-4862**.

His complete Curriculum Vitae and credentials can be found in his homepage: <http://GridSec.usc.edu/Hwang.html>, where reprints of papers and slide presentations can be downloaded. His mailing address is given below:

**Prof. Kai Hwang, Univ. of Southern California,
3740 McClintock Ave. EEB 212,
Los Angeles, CA. 90089-2562 USA**

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