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## Education

- 2000–2007: Ph.D. Department of Management Science and Information Systems, University of Texas at Austin. Interdisciplinary major in Business, Economics and Computer Science. Dissertation title: “*Three Essays on the Interface of Computer Science, Economics and Information Systems*”  
Dissertation Committee Members: Andrew B. Whinston (Chair Professor, MSIS), Maxwell B. Stinchcombe (Professor, Economics), E. Allen Emerson (Endowed Professor, Computer Science), J. Strother Moore (Chair Professor and Department Chair, Computer Science), John Mote (Associated Professor, MSIS)
- 1995–1997: Ph.D. study in Mathematics at the Eötvös University, Budapest, Hungary. Eötvös University is the top research university in science in Hungary. My research fields were geometric measure theory and fractal geometry. I quit the PhD program in 1997 because I was hired by IBM, USA.
- 1989–1995: M.Sc. in Mathematics. Major in Pure Mathematics, School of Sciences, Eötvös University, Budapest, Hungary. GPA: 5.0 out of 5 in major subjects. Thesis: “*The Hausdorff-Dimension of Distance-Sets.*” Advisor: Miklós Laczkovich, an Internationally renowned mathematician.
- 1985–1989: Grammar School, Árpád Gimnázium, Special Mathematics Class, Budapest.

## Awards

- 2002: Outstanding Technical Achievement award from IBM for the design and implementation of the MESA Cycle Simulator.
- 1992: TEMPUS scholarship from the European Union to study in the University of Sussex, Brighton, UK.
- 1989: In the five-member team representing Hungary in the 20th International Physics Olympics Competition. Teams from About 50 countries competed. Awarded **3rd Prize**.
- 1989: **2nd Place** in the Fényes Imre International Physics Competition.
- 1989: **2nd Place** in the Hungarian National Physics Competition (OKTV)
- 1988: **1st Place** in the Hungarian National Mathematics Competition (OKTV)
- 1987: **1st Place** in the Hungarian National Mathematics Competition
- 1986: **8th Place** in the Hungarian National Physics Competition

## Journal Publications

- [1] Buy-price English Auction, (w/ Wenli Wang and Andrew B. Whinston), *Journal of Economic Theory* 129 (July 2006) 31–56.
- [2] Binary Vickrey auction – A robust and efficient multi-unit sealed-bid online auction protocol against buyer multi-identity bidding (w/ Wenli Wang and Andrew B. Whinston), *Decision Support Systems* 43(2), March 2007, 301–312.
- [3] E-process Control and Assurance Using Model Checking, (w/ Wenli Wang, Andrew D. Bailey, Jr., and Andrew B. Whinston), *IEEE Computer*, 33(10):48–53, October 2000.
- [4] Designing Mechanisms for E-commerce Security: An Example from Sealed-bid Auctions, (w/ Wenli Wang and Andrew B. Whinston), *International Journal of Electronic Commerce*, 6(2):113–130, Winter 2001–2002.

## Conference Publications and Presentations

- [5] Designing Secure Mechanisms for Online Processes, (w/ Wenli Wang and Andrew B. Whinston), In *Proceedings - International Conference on Electronic Commerce*, pages 312–318, Seoul, Korea, August 2000. Seung Leem publishing Co.
- [6] Economic Mechanism Design for E-commerce Security, (w/ Wenli Wang and Andrew B. Whinston), In *Proceedings of the International Conference on Information Systems*, Sidney, Australia, December 2000.
- [7] Shill Bidding in Multi-round Online Auctions, (w/ Wenli Wang and Andrew B. Whinston), In *Proceedings - Hawaii International Conference on System Sciences*, Hawaii, USA, January 2002.
- [8] Buy-price English Auction, (w/ Wenli Wang and Andrew B. Whinston), *Workshop for Information Systems and Economics*, Barcelona, December 2002.

- [9] Sequential Auctions with Shill Bidding. (w/ Wenli Wang and Andrew B. Whinston). *The Fifth International Conference on Electronic Commerce*, Pittsburgh, October 2003.

## Working Papers

- [10] Mechanism Design for Grid Computing, (w/ Andrew B. Whinston), July 2007  
[11] Shill Bidding in English Auctions, (w/ Wenli Wang and Andrew B. Whinston), May 2006.  
[12] Model Checking – a Rigorous and Efficient Tool for Preventing E-business Failures, (w/ Wenli Wang, Andrew D. Bailey, Jr., and Andrew B. Whinston), July 2002.

## Research Interests

Economic Mechanism Design: online auctions, financial markets, market-based pricing, reputations.

Reliability and Security: formal and functional verification of software, systems and chip designs.

Economic and computational issues in grid computing.

## Teaching Interests

IT, Microeconomics, Industrial Organization, Computer Science, Network and Telecommunications

## Work Experience

1997–present: Software Engineer at IBM, Austin, developing EDA (Electronic Design Automation) tools used across IBM in the chip design process.

Designed and implemented the main multi-threaded scheduler engine for Faust, a C++ based high level micro-architectural simulator used for the high-level design of the Power4, Power6 and the current Power7 microarchitectures and systems.

Was one of the main developers of the MVLSIM leveled-compiled-code cycle simulator, which was the primary tool used for the functional verification of the IBM Power3, Power4, PowerPC G3 and G4 microprocessors.

The main architect and developer of MVLSIM's successor, the MESA simulator engine, which is a portable leveled event-driven simulator written in C++. MESA was used in final phase of the functional verification of the Power4 system and for the verification of all subsequent microprocessor designs, including the Cell processor used in the Sony PS3 game console.

Currently working on expanding the MESA simulator engine and designing and implementing new advanced boolean optimization techniques based on the symmetry groups of boolean functions.

Maintain a flexible multi-platform GNU make based build environment used by many of our EDA software teams to compile their software on various of Unix and Linux platforms.

1996–1997: Coordinator of the Zsh Development Group. The Z-shell (<http://www.zsh.org/>) is a portable open source implementation of the IEEE Posix Shell and Tools specification (IEEE 1003.2) with many extensions for interactive use and powerful scripting. Maintained the code base, made decisions about the main development directions, reviewed, approved and committed fixes and features submitted by developers, prepared and announced releases and important bug-fixes.

Contributor to various open source software: Linux libc-5.4.x, elm-2.4ME+, man\_db 2.3, getty\_ps, the CMD640 driver of the Linux 2.0 kernel, the GCC compiler and the MPlayer movie player.

1995–1997: System Administrator in Computer Science Department at Eötvös University. Managed a Unix cluster of 22 machines with over 800 users of students and faculty, running AIX 3.2, DEC OSF/1 V2.0, Linux 2.0, Solaris 2.4, SunOS 4.1.3 and Ultrix 4.2 and connected via NFS and NIS.

1995–1997: Instructor in the Library Information Systems Department, Eötvös University. Taught basic computer science courses for three semesters.

1994–1995: Linux system administrator in the Library Information Systems Department, Eötvös University.

## Other Experience

Expert in various assembly languages (x86, x86-64, MMX/DSP programming, PowerPC, Z80 etc.). Have experience in HTML 4.0, CSS 2.0, JavaScript, Common Lisp, ACL2 (a Lisp-based formal automated theorem prover),  $\text{T}_{\text{E}}\text{X}$ / $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$ , and can quickly learn any other programming language on demand.

**Hobbies:** Computers (programming since the age of 10), Math, Competitive bridge, Argentine Tango.