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# RUGGIERO CAVALLO

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**RESEARCH GOALS** My work is at the intersection of game theory and computer science, mainly in the area called mechanism design. My focus has been the design of mechanisms that maximize social-welfare – in, e.g., resource allocation or sequential decision problems – even when individuals pursue only their own self-interest.

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**EDUCATION** **Harvard University**, Cambridge, MA (2002–2008): Ph.D. in Computer Science, June 2008.  
Dissertation: *Social Welfare Maximization in Dynamic Strategic Decision Problems*  
Committee: David C. Parkes (advisor), Jerry Green, Barbara Grosz, Satinder Singh, and Leslie Valiant.  
S.M. degree in computer science, June 2004.

**Johns Hopkins University**, Baltimore, MD (2001-2002): grad. course work while employed at STScI.

**Cornell University**, Ithaca, NY (1999-2001): Bachelor of Arts with distinction in all subjects, 2001.  
Major in Computer Science; minor in Philosophy & Mathematics.

**Hamilton College**, Clinton, NY (1997-1999): Two years towards BA before transferring to Cornell.  
Major in Computer Science; minor in Philosophy.

*Select list of advanced courses:* computational learning theory; electronic market design; iterative combinatorial exchanges; microeconomic theory; decision-making in large-scale systems; probabilistic reasoning; artificial intelligence; machine learning; consciousness; society of mind; Chinese language.

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**TEACHING** **Harvard University Teaching Fellow:** responsible for weekly recitation sections, review sessions, occasional lecture filling-in for professor; grading of homework, exams, and course projects; office hours; helping professor design/create course material, etc.

- **CS 182:** Introduction to Artificial Intelligence (Fall 2003, Fall 2004)
- **CS 286r:** Topics at the Interface between Computer Science and Economics (Spring 2006)

**Harvard University Mind, Brain, & Behavior senior workshop leader:** led tutorials and group discussions among Harvard College seniors doing MBB theses (Spring 2004, Spring 2005)

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**WORK EXPERIENCE** **University of Pennsylvania**, Philadelphia, PA (September, 2008–present)  
*Postdoctoral fellow:* Researcher in the CIS department, under the advisorship of Prof. Michael Kearns.

**Sony Computer Science Laboratory**, Tokyo, Japan (Summer, 2003)  
*Research Intern:* I explored problems related to computationally modeling aspects of human consciousness.

**Space Telescope Science Institute**, Baltimore, MD (July 2001–July 2002)  
*Software Engineer:* STScI is the astronomical research center responsible for operating the Hubble Space Telescope for NASA. I was a member of the planning & development team, the group that develops and maintains– among other projects– a long-range planner (SPIKE) and an expert system (TRANS) that “transforms” scientific specifications for HST observations into detailed plans for their execution.

**Cornell University**, Ithaca, NY (Summer 2000)  
*Research Assistant:* I worked with Prof. Bart Selman on a research project in the area of Boolean Satisfiability (SAT). Work included design and implementation of a genetic program to discriminate among, and form effective combinations of, various SAT solvers.

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**SELECTED PUBLICATIONS** Optimal Coordinated Planning Amongst Self-Interested Agents with Private State. Ruggiero Cavallo, David C. Parkes, and Satinder Singh. *In the Proceedings of the 22nd Conference on Uncertainty in Artificial Intelligence*, pages 55-62, Cambridge, MA, 2006.

Optimal Decision-Making With Minimal Waste: Strategyproof Redistribution of VCG Payments. Ruggiero Cavallo. *Proceedings of the 5th International Joint Conference on Autonomous Agents and Multi Agent Systems*, Hakodate, Japan, 2006. [*Nominated for best student paper award.*]

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**MISCELLANY** Passionate musician/songwriter/guitar player; intermediate speaker of Mandarin Chinese; stint as web editor of *Harvard Asia Quarterly*; graduate committee for Harvard Mind/Brain/Behavior initiative.