

Research interests

Artificial intelligence, computational game theory.

Education

Carnegie Mellon University
Ph.D. candidate, Computer Science
M.S., Computer Science

Pittsburgh, PA
Present
2009

Harvard University
A.B., Mathematics

Cambridge, MA
2005

Professional experience

Tower Research Capital LLC
Quantitative analyst
Developed algorithms for trading currencies.

New York, NY
2005–2006

National Security Agency
Participant in Director's Summer Program

Ft. Meade, MD
Summer 2005

Oregon State University
Participant in Research Experiences for Undergraduates Program in Mathematics

Corvallis, OR
Summer 2004

Awards

- **First place**, Annual Computer Poker Competition, two-player no-limit Texas Hold'em bankroll instant run-off division, at the *National Conference on Artificial Intelligence (AAAI)*, 2010 (with Andrew Gilpin and Tuomas Sandholm).
- **Finalist**, Best Student Paper Award for the paper "Computing an Approximate Jam/Fold Equilibrium for 3-Player No-Limit Texas Hold'em Tournaments" at the *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2008 (with Tuomas Sandholm).
- **Honorable Mention**, National Science Foundation graduate fellowship, 2006.
- **Recipient**, United States Presidential Scholarship, 2001.
- **Recipient**, National Merit Scholarship, 2001.

Publications

Refereed conference papers

- Sam Ganzfried and Tuomas Sandholm. 2012. Safe Opponent Exploitation. *ACM Conference on Electronic Commerce (ACM-EC)*. A shorter version will appear in the *International Conference on Autonomous Agents and Multiagent Systems (AAMAS) Workshop on Adaptive and Learning Agents (ALA)*, 2012.

- Sam Ganzfried, Tuomas Sandholm, and Kevin Waugh. 2012. Strategy Purification and Thresholding: Effective Non-Equilibrium Approaches for Playing Large Games. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*. Early versions of this paper appeared as “Strategy Purification” in the *National Conference on Artificial Intelligence (AAAI) Workshop on Applied Adversarial Reasoning and Risk Modeling*, 2011, and as a 2-page abstract in the *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2011.
- Sam Ganzfried. 2011. Computing Strong Game-Theoretic Strategies in Jotto. *Conference on Advances in Computer Games (ACG)*.
- Sam Ganzfried and Tuomas Sandholm. 2011. Game Theory-Based Opponent Modeling in Large Imperfect-Information Games. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*.
- Sam Ganzfried and Tuomas Sandholm. 2010. Computing Equilibria by Incorporating Qualitative Models. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*.
- Sam Ganzfried and Tuomas Sandholm. 2009. Computing Equilibria in Multiplayer Stochastic Games of Imperfect Information. *International Joint Conference on Artificial Intelligence (IJCAI)*.
- Sam Ganzfried and Tuomas Sandholm. 2008. Computing an Approximate Jam/Fold Equilibrium for 3-Player No-Limit Texas Hold'em Tournaments. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*.

Manuscripts

- Sam Ganzfried and Tuomas Sandholm. 2010. Computing Equilibria by Incorporating Qualitative Models. Technical report CMU-CS-10-105.

Other papers, presentations, and posters

- Sam Ganzfried and Tuomas Sandholm. 2011. Game Theory-Based Opponent Modeling in Large Imperfect-Information Games. *INFORMS Annual Meeting*.
- Sam Ganzfried and Tuomas Sandholm. 2010. Computing Equilibria by Incorporating Qualitative Models. *INFORMS Annual Meeting*. Also presented at the *Brazilian Workshop of the Game Theory Society (BWGT)*, 2010.
- Sam Ganzfried, Andrew Gilpin, and Tuomas Sandholm. 2010. Automated Abstraction and Custom Equilibrium-Finding Algorithms for Imperfect-Information Games. *National Conference on Artificial Intelligence (AAAI)*. (Poster presentation for the Annual Computer Poker Competition.)
- Sam Ganzfried and Tuomas Sandholm. 2010. A New Algorithm for Opponent Exploitation in Imperfect-Information Games. *National Conference on Artificial Intelligence (AAAI)*. (Poster presentation for the Annual Computer Poker Competition.)
- Sam Ganzfried and Tuomas Sandholm. 2008. Algorithms for Computing Nash Equilibria in Multiplayer Stochastic Games of Imperfect Information. *INFORMS Annual Meeting*.
- Sam Ganzfried and Tuomas Sandholm. 2008. Algorithms for Multiplayer Stochastic Games of Imperfect Information with Application to Three-Player No-Limit Texas Hold'em Tournaments. *International Congress of the Game Theory Society (GAMES)*. (Poster presentation.)
- Sam Ganzfried. 2004. A New Algorithm for Knight's Tours. Proceedings of the *Research Experiences for Undergraduates Program in Mathematics*.

Professional service

Program committees

- National Conference on Artificial Intelligence (AAAI), 2012

Journal reviewing

- Artificial Intelligence
- Computational Intelligence

Conference reviewing

- National Conference on Artificial Intelligence (AAAI), 2010.
- International Conference on Parallel Processing (ICPP), 2009

Teaching

- Teaching assistant for Artificial Intelligence: Representation and Problem Solving, Carnegie Mellon University, fall 2010.
- Teaching assistant for Graduate Artificial Intelligence, Carnegie Mellon University, spring 2009.