Yoav Shoham
Professor of Computer Science, Emeritus

CONTACT INFORMATION
• Administrator
  Alex Sandra Pinedo - Administrative Associate
  Email asandra@cs.stanford.edu
  Tel (650) 721-6625

Bio

BIO
Shoham's artificial intelligence work includes formalizing common-sense (including notions such as time, causation, and mental state), and multi-agent systems (including agent-oriented programming and coordination mechanisms). His current interests concern game theory pragmatics, and formal models of intention.

ACADEMIC APPOINTMENTS
• Emeritus Faculty, Acad Council, Computer Science

HONORS AND AWARDS
• Fellow, Association for the Advancement of Artificial Intelligence (2002)
• Autonomous Agents Research Award, ACM/SIGART (2008)
• Best Paper Award, ACM Conference on Electronic Commerce (2009)
• Best Paper Award, ACM Conference on Electronic Commerce (2010)
• Influential Paper Award, AAMAS (2011)
• Fellow, ACM (2013)
• Allen Newell Award, AAAI/ACM (2013)

PROFESSIONAL EDUCATION
• PhD, Yale (1986)

Publications

PUBLICATIONS
• If Multi-Agent Learning is the Answer, What is the Question? Artificial Intelligence, special issue on Foundations of Multi-Agent Learning
  Shoham, Y., Powers, R.
  edited by Vohra, R., Wellman, M.
  ; 365–377
• Empirical Hardness Models for Combinatorial Auctions. *Chapter 20 of Combinatorial Auctions.*
  Leyton-Brown, K., Nudelman, E.

• A Test Suite for Combinatorial Auctions. *Chapter 19 of Combinatorial Auctions.*
  Leyton-Brown, K., Shoham, Y.

• Introduction to Combinatorial Auctions. *Introductory chapter of Combinatorial Auctions.*
  Cramton, P., Shoham, Y.

• Marginal Contribution Nets: A Compact Representation Scheme for Coalitional Games.
  Ieong, S., Shoham, Y.

• Game Theory Pragmatics: A Challenge for AI.
  Shoham, Y.

• Success, Strategy and Skill: an Experimental Study.
  Archibald, C., Altman, A., Shoham, Y.

• Multi-Attribute Coalitional Games.
  Ieong, S., Shoham, Y.

• Learning in Games with More than Two Players.
  Vu, T., Powers, R., Shoham, Y.

  Shoham, Y.

• Optimal Testing of Structured Knowledge.
  Munie, M., Shoham, Y.

• Asymptotically Optimal Repeated Auctions for Sponsored Search.
  Lambert, N., Shoham, Y.

• Internal Implementation.
  Anderson, A., Shoham, Y., Altman, A.

• Dispersion Games *AAAI-02.*
  Grenager, T., Powers, R., Shoham, Y.

• Run the GAMUT: A Comprehensive Approach to Evaluating Game-Theoretic Algorithms.
  Leyton-Brown, K., Nudelman, E., Wortman, J., Shoham, Y.

• On the Agenda Control Problem in Knockout Tournaments.
  Vu, T., Altman, A., Shoham., Y.

• Modeling Billiards Games.
  Archibald, C., Shoham, Y.

• Bayesian Coalitional Games.
  Ieong, S., Shoham, Y.

• Near-Optimal Search in Continuous Domains.
  Ieong, S., Lambert, N., Shoham, Y., Brafman, R.

• Eliciting Properties of Probability Distributions.
  Lambert, N., Pennock, D., M., Shoham, Y.

• Broadening the Scope of Optimal Seeding Analysis in Knockout Tournaments.
Vu, T.

- **Rational Programming** *Unpublished.*
  Shoham, Y.

- **Joint Process Games: From Ratings to Wikis.**
  Munie, M., Shoham, Y.

- **Higher Educated Guesses.**
  Shoham, Y.

- **On the Complexity of Schedule Control Problems for Knockout Tournaments.**
  Vu, T., Altman, A., Shoham, Y.

- **A Framework for the Quantitative Evaluation of Voting Rules.**
  Munie, M., Tang, P., Shoham, Y.

- **Team Competition.**
  Tang, P., Shoham, Y., Lin, F.

- **Fair Seeding in Knockout Tournaments** *ACM TRANSACTIONS ON INTELLIGENT SYSTEMS AND TECHNOLOGY*
  Thuc Vu, T., Shoham, Y.
  2012; 3 (1)

- **Designing competitions between teams of individuals** *ARTIFICIAL INTELLIGENCE*
  Tang, P., Shoham, Y., Lin, F.
  2010; 174 (11): 749-766

- **Computational Pool: A New Challenge for Game Theory Pragmatics** *AI MAGAZINE*
  Archibald, C., Altman, A., Greenspan, M., Shoham, Y.
  2010; 31 (4): 33-41

- **Multi-Agent Learning II: Algorithms.** *Encyclopedia of Machine Learning*
  Shoham, Y., Powers, R.
  edited by Sammut, C., Webb, G.
  Springer.2010

- **Multi-Agent Learning I: Problem Definition.** *Encyclopedia of Machine Learning*
  Shoham, Y., Powers, R.
  edited by Sammut, C., Webb, G.
  Springer.2010

- **Cause for Celebration, Cause for Concern.** *Heuristics, Probability and Causality: a Tribute to Judea Pearl*
  Shoham, Y.
  edited by Dechter, R., Geffner, H., Halpern, J., Y.
  College Publications.2010

- **Untitled.** *Epistemic Logic: 5 Questions*
  Shoham, Y.
  edited by Hendricks, V., F., Roy, O.
  Automatic Press / VIP.2010

- **Joint Revision of Belief and Intention.**
  Icard, T., Pacuit, E., Shoham, Y.
  2010

- **Logical Theories of Intention and the Database Perspective** *JOURNAL OF PHILOSOPHICAL LOGIC*
  Shoham, Y.
- **Empirical Hardness Models: Methodology and a Case Study on Combinatorial Auctions** *Journal of the ACM*
  Leyton-Brown, K., Nudelman, E., Shoham, Y.
  2009; 56 (4)

- **Ranking games** *Artificial Intelligence*
  Brandt, F., Fischer, F., Harrenstein, P., Shoham, Y.
  2009; 173 (2): 221-239

- **Multiagent Systems: Algorithmic, Game Theoretic and Logical Foundation**
  Shoham, Y., Leyton-Brown, K.
  Cambridge University Press. 2009

- **Fault tolerant mechanism design** *Artificial Intelligence*
  Porter, R., Ronen, A., Shoham, Y., Tennenholtz, M.
  2008; 172 (15): 1783-1799

- **Computer science and game theory** *Communications of the ACM*
  Shoham, Y.
  2008; 51 (8): 74-79

- **Simple search methods for finding a Nash equilibrium** *2nd World Congress of the Game-Theory-Society*
  Porter, R., Nudelman, E., Shoham, Y.
  ACADEMIC PRESS INC ELSEVIER SCIENCE. 2008: 642-62

- **Essentials of Game Theory: A Concise, Multidisciplinary Introduction**
  Leyton-Brown, K., Shoham, Y.

- **Mechanism Design with Execution Uncertainty** *UAI-02.*
  Porter, R., Ronen, A., Shoham, Y., Tennenholtz, M.
  2008

- **A general criterion and an algorithmic framework for learning in multi-agent systems** *Machine Learning*
  Powers, R., Shoham, Y., Vu, T.
  2007; 67 (1-2): 45-76

- **If multi-agent learning is the answer, what is the question?** *Artificial Intelligence*
  Shoham, Y., Powers, R., Grenager, T.
  2007; 171 (7): 365-377

- **The Israeli-Palestinian Science Organization** *Science*
  2007; 315 (5808): 39-39

- **On strictly competitive multi-player games.**
  Brandt, F., Fischer, F.
  2006

- **Combinatorial Auctions**
  edited by Cramton, P., Shoham, Y., Steinberg, R.
  MIT Press. 2006

- **Non-cooperative computation: Boolean functions with correctness and exclusivity** *Theoretical Computer Science*
  Shoham, Y., Tennenholtz, M.
  2005; 343 (1-2): 97-113

- **On cheating in sealed-bid auctions** *4th ACM Conference on Electronics Commerce (EC’03)*
  Porter, R., Shoham, Y.
  ELSEVIER SCIENCE BV. 2005: 41-54
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Powers, R., Shoham, Y.
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Ieong, S., McGrew, R., Nudelman, E., Shoham, Y.
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Porter, R., Shoham, Y., Tennenholtz, M.
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• Addressing the Free-Rider Problem in File-Sharing Systems: A Mechanism-Design Approach
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• Rational Computations and the Communication Complexity of Auctions *Games and Economic Behavior*
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  Val, A. D., Shoham, Y.
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  Lin, F., Shoham, Y.
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