

Stanford



Michael Genesereth

Associate Professor of Computer Science and, by courtesy, of Law

Bio

BIO

Genesereth is most known for his work on Computational Logic and applications of that work in Enterprise Management, Computational Law, and General Game Playing. He is one of the founders of Teknowledge, CommerceNet, Mergent Systems, and Symbium. Genesereth is the director of the Logic Group at Stanford and the founder and research director of CodeX - the Stanford Center for Legal Informatics.

ACADEMIC APPOINTMENTS

- Associate Professor, Computer Science
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)

ADMINISTRATIVE APPOINTMENTS

- Research Director, CodeX: The Stanford Center for Legal Informatics, (2005- present)

PROGRAM AFFILIATIONS

- Symbolic Systems Program

PROFESSIONAL EDUCATION

- PhD, Harvard University (1978)

LINKS

- <http://logic.stanford.edu/people/genesereth>: <http://logic.stanford.edu/people/genesereth>

Teaching

COURSES

2023-24

- Computational Logic: CS 157 (Aut)
- General Game Playing: CS 227B (Spr)
- Logic Programming: CS 151 (Spr)

2022-23

- Computational Logic: CS 157 (Aut)
- General Game Playing: CS 227B (Spr)
- Logic Programming: CS 151 (Spr)

2021-22

- Computational Logic: CS 157 (Aut)
- General Game Playing: CS 227B (Spr)
- Logic Programming: CS 151 (Spr)

2020-21

- Computational Law: CS 204 (Spr)
- Computational Law: LAW 4019 (Spr)
- Computational Logic: CS 157 (Aut)
- Logic Programming: CS 151 (Spr)

STANFORD ADVISEES

Master's Program Advisor

Tommy Bruzzese, Alina Chou, Murtaza Hassan, Sina Jandaghi Semnani, Muhammad Khattak, Teland La, Li-Heng Lin, Udayan Mandal, Teresa Noyola, Zach Rotzal, Alex Sun, Karen Wang, Joseph Zhu

Publications

PUBLICATIONS

- **Knowledge graphs: Introduction, history, and perspectives** *AI MAGAZINE*
Chaudhri, V. K., Baru, C., Chittar, N., Dong, X., Genesereth, M., Hendler, J., Kalyanpur, A., Lenat, D. B., Sequeda, J., Vrandecic, D., Wang, K.
2022; 43 (1): 17-29
- **Practical Reformulation of Deductive Databases**
Genesereth, M., Mohapatra, A., IEEE
IEEE COMPUTER SOC.2019: 65-72
- **Rule-Based Exploration of Structured Data in the Browser**
Agarwal, S., Mohapatra, A., Genesereth, M., Boley, H., Bassiliades, N., Gottlob, G., Sadri, F., Paschke, A., Roman, D.
SPRINGER-VERLAG BERLIN.2015: 161-75
- **The Herbrand Manifesto Thinking Inside the Box**
Genesereth, M., Kao, E., Bassiliades, N., Gottlob, G., Sadri, F., Paschke, A., Roman, D.
SPRINGER-VERLAG BERLIN.2015: 3-12
- **The International General Game Playing Competition** *AI MAGAZINE*
Genesereth, M., Bjoernsson, Y.
2013; 34 (2): 107-111
- **PARACONSISTENT INFERENCE FROM DATA USING EXISTENTIAL Omega-ENTAILMENT** *INTERNATIONAL JOURNAL OF SEMANTIC COMPUTING*
Kassoff, M., Genesereth, M. R.
2011; 5 (3): 257-69
- **Semantics for Smart Services** *SCIENCE OF SERVICE SYSTEMS*
Petrie, C., Hochstein, A., Genesereth, M., Demirkan, H., Spohrer, J. C., Krishna
2011: 91-105
- **Logical Spreadsheets** *4th International Web Rule Symposium*
Genesereth, M.
SPRINGER-VERLAG BERLIN.2010: 1-1
- **Data Integration - The Relational Logic Approach**
Genesereth, M., R.

Morgan-Claypool.2010

- **Semantic Email Addressing The Semantic Web Killer App?** *IEEE INTERNET COMPUTING*
Kassoff, M., Petrie, C., Zen, L., Genesereth, M.
2009; 13 (1): 48-55
- **Equivalence of SQL Queries In Presence of Embedded Dependencies** *28th ACM SIGMOD-SIGACT-SIGART Symposium on Principles of Database Systems (PODS)*
Chirkova, R., Genesereth, M. R.
ASSOC COMPUTING MACHINERY.2009: 217–226
- **Propositional Automata and Cell Automata: Representational Frameworks for Discrete Dynamic Systems** *21st Australian Joint Conference on Artificial Intelligence*
Schkufza, E., Love, N., Genesereth, M.
SPRINGER-VERLAG BERLIN.2008: 56–66
- **PrediCalc: a logical spreadsheet management system** *KNOWLEDGE ENGINEERING REVIEW*
Kassoff, M., Genesereth, M. R.
2007; 22 (3): 281-295
- **Reformulation for extensional reasoning** *7th International Symposium on Abstraction, Reformulation and Approximation*
Hinrichs, T. L., Genesereth, M. R.
SPRINGER-VERLAG BERLIN.2007: 215–229
- **General game playing: Overview of the AAI competition** *AI MAGAZINE*
Genesereth, M., Love, N., Pell, B.
2005; 26 (2): 62-72
- **Computational Law**
Love, N., Genesereth, M., R.
2005
- **Axiom Schemata as Metalevel Axioms: Model Theory**
Hinrichs, T., L., Genesereth, M., R.
2005
- **PrediCalc: A Logical Spreadsheet Management System**
Kassoff, M., Zen, L., Garg, A., Genesereth, M., R.
2005
- **Database Reformulation with Integrity Constraints**
Chirkova, R., Genesereth, M., R.
2005
- **General Game Playing - Overview of the AAI Competition** *AAAI Magazine*
Genesereth, M., R., Love, N., Pell, B.
2005; 26 (2)
- **Adding AI to web services** *International Symposium on Agent-Mediated Knowledge Management*
Petrie, C., Genesereth, M., Bjornsson, H., Chirkova, R., Ekstrom, M., Gomi, H., Hinrichs, T., Hoskins, R., Kassoff, M., Kato, D., Kawazoe, K., Min, J. U., Mohsin, et al
SPRINGER-VERLAG BERLIN.2004: 322–338
- **Recursive query plans for data integration** *JOURNAL OF LOGIC PROGRAMMING*
Duschka, O. M., Genesereth, M. R., Levy, A. Y.
2000; 43 (1): 49-73
- **Linearly bounded reformulations of conjunctive databases** *1st International Conference on Computational Logic (CL 2000)*
Chirkova, R., Genesereth, M. R.
SPRINGER-VERLAG BERLIN.2000: 987–1001

- **Linearly Bounded Reformulations of Conjunctive Databases**
Chirkova, R., Genesereth, M., R.
2000
- **Linearly Bounded Reformulations of Unary Databases**
Chirkova, R., Genesereth, M., R.
2000
- **Database Reformulation**
Chirkova, R., Genesereth, M., R.
1998
- **Dervish** in *AI-based Mobile Robots: Case Studies of Successful Robot Systems*
Nourbakhsh, I., Genesereth, M., R.
edited by Kortenkamp, D., Bonasso, P., Murphy, R.
MIT Press.1998: 1
- **Query Planning with Disjunctive Sources**
Duschka, O., Genesereth, M., R.
1998
- **Teaching AI Using Robots** in *AI-based Mobile Robots: Case Studies of Successful Robot Systems*
Nourbakhsh, I., Genesereth, M., R.
edited by Kortenkamp, D., Bonasso, P., Murphy, R.
MIT Press.1998: 1
- **Mobile robot obstacle avoidance via depth from focus** *ROBOTICS AND AUTONOMOUS SYSTEMS*
Nourbakhsh, I. R., Andre, D., Tomasi, C., Genesereth, M. R.
1997; 22 (2): 151-158
- **The conceptual basis for mediation services** *IEEE INTELLIGENT SYSTEMS & THEIR APPLICATIONS*
Wiederhold, G., Genesereth, M.
1997; 12 (5): 38-47
- **Using Infomaster to Create a Housewares Virtual Catalog** *Journal of Electronic Markets, Institute for Media and Communication Management, University of St. Gallen, Switzerland*
Keller, A., M., Genesereth, M., R.
1997; 7 (4): 41-45
- **Proceedings of the Sixth International World Wide Web Conference**
edited by Genesereth, M., R., Patterson, A.
Elsevier.1997
- **Abstraction in Planning and Execution** *Logic Group, Stanford University Computer Science Department*
Nourbakhsh, I., Genesereth, M., R.
1997
- **Infomaster - An Information Integration Tool**
Duschka, O., Genesereth, M., R.
1997
- **Infomaster: An Information Integration System**
Genesereth, M., R., Keller, A., M., Duschka, O.
1997
- **Answering Recursive Queries Using Views**
Duschka, O., Genesereth, M., R.
1997

- **Query Planning in Infomaster**
Duschka, O., Genesereth, M., R.
1997
- **An Agent-Based Framework for Interoperability** *in Software Agents*
Genesereth, M., R.
edited by Bradshaw, J.
AAAI Press.1997: 1
- **Assumptive planning and execution: A simple, working robot architecture** *AUTONOMOUS ROBOTS*
Nourbakhsh, I. R., Genesereth, M. R.
1996; 3 (1): 49-67
- **Stanford Information Network** *Logic Group, Stanford University Computer Science Department*
Genesereth, M., R., Keller, M., A., Mueller, G., C.
1996
- **Assumptive Planning and Execution: A Simple Working Robot Architecture**, *Autonomous Robots*
Nourbakhsh, I., Genesereth, M., R.
1996; 3: 49-67
- **Obstacle avoidance via depth from focus** *Image Understanding Workshop*
Nourbakhsh, I. R., Andre, D., Tomasi, C., Genesereth, M. R.
MORGAN KAUFMANN PUB INC.1996: 1339–1344
- **McCarthy's idea** *European Workshop on Logics in Artificial Intelligence (JELIA 96)*
Genesereth, M. R.
SPRINGER-VERLAG BERLIN.1996: 134–142
- **A distributed and anonymous knowledge sharing approach to software interoperation** *INTERNATIONAL JOURNAL OF COOPERATIVE INFORMATION SYSTEMS*
Singh, N., Genesereth, M., Syed, M.
1995; 4 (4): 339-367
- **Development of multi-institutional testbed for collaborative facility engineering infrastructure** *2nd Congress on Computing in Civil Engineering (II-CCCE)*
KHEDRO, T., CASE, M. P., Flemming, U., Genesereth, M. R., LOGCHER, R., Pedersen, C., Snyder, J., Sriram, R. D., TEICHOLZ, P. M.
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- **SOFTWARE AGENTS** *COMMUNICATIONS OF THE ACM*
Genesereth, M. R., Ketchpel, S. P.
1994; 37 (7): 48-?
- **THE FEDERATION ARCHITECTURE FOR INTEROPERABLE AGENT-BASED CONCURRENT ENGINEERING SYSTEMS** *CONCURRENT ENGINEERING-RESEARCH AND APPLICATIONS*
KHEDRO, T., Genesereth, M. R.
1994; 2 (2): 125-131
- **PROGRESSIVE NEGOTIATION FOR RESOLVING CONFLICTS AMONG DISTRIBUTED HETEROGENEOUS COOPERATING AGENTS** *12th National Conference on Artificial Intelligence*
KHEDRO, T., Genesereth, M. R.
M I T PRESS.1994: 381–386
- **A Framework for Collaborative Distributed Facility Engineering**
Khedro, T., Genesereth, M., R., Teicholz, P.
1994
- **Modeling Multiagent Cooperation as Distributed Constraint Satisfaction Problem Solving**
Khedro, T., Genesereth, M., R.
1994

- **Solution Consistency and Convergence in Cooperative Distributed Problem Solving**
Khedro, T., Genesereth, M., R.
1994
- **Concurrent Engineering through Interoperable Software Agents**
Khedro, T., Genesereth, M., R., Teicholz, P.
1994
- **FROM DART TO DESIGNWORLD - A CHRONICLE OF RESEARCH ON AUTOMATED ENGINEERING IN THE STANFORD LOGIC GROUP** *ARTIFICIAL INTELLIGENCE*
Genesereth, M. R.
1993; 59 (1-2): 159-165
- **AGENT-BASED FRAMEWORK FOR INTEGRATED FACILITY ENGINEERING** *ENGINEERING WITH COMPUTERS*
KHEDRO, T., Genesereth, M. R., TEICHOLZ, P. M.
1993; 9 (2): 94-107
- **From Dart to Designworld: A Chronicle of Research on Automated Engineering in The Stanford Logic Group** *Artificial Intelligence, to appear*
Genesereth, M., R.
1993
- **Agent-Based Technology for Facility Design Software Integration**
Khedro, T., Teicholz, P., M., Genesereth, M., R.
1993
- **A Formal Approach to Interdisciplinary Communication of Facility Design Information** *International Journal for Artificial Intelligence in Engineering*
Khedro, T., Teicholz, P., M., Genesereth, M., R.
1993
- **Collaborative Distributed Facility Engineering Through Agent-Based Software Integration**
Khedro, T., Genesereth, M., R.
1993
- **Time-Saving Tips for Problem Solving with Incomplete Information**
Genesereth, M., R., Nourbakhsh, I.
1993
- **PACT: An Experiment in Integrating Concurrent Engineering Systems** *Computer*
Cutkosky, M., Engelmores, R., S., Fikes, R., E., Genesereth, M., R., Gruber, T., R., Mark, W., S.
1993; 26 (1): 28-37
- **Progressive Negotiation: A Strategy for Resolving Conflicts in Cooperative Distributed Multidisciplinary Design**
Khedro, T., Genesereth, M., R.
1993
- **FCDA: A Framework for Collaborative Distributed Multidisciplinary Design**
Khedro, T., Genesereth, M., R., Teicholz, P., M.
1993
- **An Agent-Based Framework for Integrated Facility Engineering** *International Journal for Engineering with Computers*
Khedro, T., Genesereth, M., R., Teicholz, P., M.
1993; 9: 94-107
- **Single Phase Agreements Among Rational Agents** *in Journal of Experimental and Theoretical Artificial Intelligence*
Rosenschein, J., S., Genesereth, M., R.
1993
- **TIME-SAVING TIPS FOR PROBLEM-SOLVING WITH INCOMPLETE INFORMATION** *11th National Conference on Artificial Intelligence (AAAI-93)*
Genesereth, M. R., Nourbakhsh, I. R.
MIT PRESS.1993: 724-730

- **AUTOMATED CONCURRENT ENGINEERING IN DESIGNWORLD** *COMPUTER*
HUYN, P. N., Genesereth, M. R., Letsinger, R.
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- **PACT - AN EXPERIMENT IN INTEGRATING CONCURRENT ENGINEERING SYSTEMS** *COMPUTER*
Cutkosky, M. R., ENGELMORE, R. S., Fikes, R. E., Genesereth, M. R., GRUBER, T. R., MARK, W. S., TENEBBAUM, J. M., Weber, J. C.
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- **SINGLE-PHASE AGREEMENTS AMONG RATIONAL AGENTS** *JOURNAL OF EXPERIMENTAL & THEORETICAL ARTIFICIAL INTELLIGENCE*
Rosenschein, J. S., Genesereth, M. R.
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- **An Agent-Based Approach for Integrated Design Environments**
Khedro, T., Genesereth, M., R., Teicholz, P., M.
1992
- **Agent-Based Concurrent Engineering**
Genesereth, M., R., Huyn, P., Letsinger, R.
1992
- **Partial Programs**
Genesereth, M., R., Hsu, J., Y.
edited by Allen, J., Fikes, R., Sandewall, E.
1991
- **A Comparative Analysis of Some Simple Architectures for Autonomous Agents** *Architectures for Cognition*
Genesereth, M., R.
edited by vanLehn, K., Erlbaum, L.
1991: 279-300
- **Designworld**
Genesereth, M., R.
1991
- **A Fast Algorithm for Automatic Theorem Proving with Equality** *Logic-91-2, Stanford University Computer Science Department*
Sikka, V., Gensereth, M., R., Singh, N.
1991
- **Knowledge Interchange Format**
Genesereth, M., R.
edited by Allen, J., Fikes, R., Sandewall, E.
1991
- **Epikit: A Library of Subroutines Supporting Declarative Representation and Reasoning**
Singh, N., P., Genesereth, M., R.
1991
- **Discrete Systems Theory** *Logic-89-6, Stanford University Computer Science Department*
Genesereth, M., R.
1989
- **Deals Among Rational Agents** *in The Ecology of Computation*
Rosenschein, J., S., Genesereth, M., R.
edited by Huberman, B., A.
North-Holland.1988: 117-132
- **Choosing Directions for Rules** *Journal of Automated Reasoning*
Treitel, R., Genesereth, M., R.
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- **Introspective Fidelity** *in Metalevel Architectures and Reflection*
Genesereth, M., R.
edited by Maes, P.
North-Holland.1987: 75–85
- **Logical Foundations of Artificial Intelligence**
Genesereth, M., R., Nilsson, N., J.
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- **The Relevance of Irrelevance**
Subramanian, D., Genesereth, M., R.
1987
- **Communication and Cooperation**
Rosenschein, J., S., Genesereth, M., R.
1987
- **CONTROLLING RECURSIVE INFERENCE** *ARTIFICIAL INTELLIGENCE*
Smith, D. E., Genesereth, M. R., Ginsberg, M. L.
1986; 30 (3): 343-389
- **Cooperation Without Communication**
Genesereth, M., R., Ginsberg, M., L., Rosenschein, J., S.
1986
- **Choosing Directions for Rules**
Treitel, R., Genesereth, M., R.
1986
- **ORDERING CONJUNCTIVE QUERIES** *ARTIFICIAL INTELLIGENCE*
Smith, D. E., Genesereth, M. R.
1985; 26 (2): 171-215
- **Deals Among Rational Agents**
Rosenschein, J., S., Genesereth, M., R.
1985
- **A Variable Supply Model for Distributing Deductions** *Journal of Parallel and Distributed Computing*
Singh, V., Genesereth, M., R.
1985
- **A Variable Supply Model for Distributing Deductions**
Singh, V., Genesereth, M., R.
1985
- **PM: A Parallel Execution Model for Backward Chaining Deductions** *Future Computing Systems*
Singh, V., Genesereth, M., R.
1985
- **Expressiveness and Language Choice** *Data and Knowledge Engineering*
Mackinlay, J., Genesereth, M., R.:
1985; 1 (1): 17-29
- **Choosing Directions for Rules** *KSL-85-46, Stanford University Heuristic Programming Project*
Trietel, R., Genesereth, M., R.
1985
- **Ordering Conjuncts in Problem Solving** *Artificial Intelligence*
Smith, D., E., Genesereth, M., R.
1985; 26 (2): 171-216

- **LOGIC PROGRAMMING** *COMMUNICATIONS OF THE ACM*
Genesereth, M. R., Ginsberg, M. L.
1985; 28 (9): 933-941
- **THE USE OF DESIGN DESCRIPTIONS IN AUTOMATED DIAGNOSIS** *ARTIFICIAL INTELLIGENCE*
Genesereth, M. R.
1984; 24 (1-3): 411-436
- **The Use of Hierarchical Design Models in the Automated Diagnosis of Computer Systems** in *Qualitative Reasoning about Physical Systems*
Genesereth, M., R.
edited by Bobrow, D.
North-Holland.1984: 411–436
- **Solving the Prisoner's Dilemma** *STAN-CS-84-1032, Stanford University Computer Science Department*
Genesereth, M., R., Ginsberg, M., L., Rosenschein, J., S.
1984
- **The Role of Abstractions in Understanding Analogies** *HPP-84-8, Stanford University Heuristic Programming Project*
Greiner, R., Genesereth, M., R.:
1984
- **Expressiveness of Languages**
Mackinlay, J., Genesereth, M., R.
1984
- **Procedural Hints in the Control of Reasoning** *HPP-84-11, Stanford University Heuristic Programming Project*
Genesereth, M., R., Smith, D., E.
1984
- **An Overview of Meta-Level Architecture**
Genesereth, M., R., Smith, D., E.
1983
- **What's New: A Semantic Definition of Novelty**
Greiner, R., Genesereth, M., R.
1983
- **Residue: A Deductive Approach to Design** *HPP-83-46, Stanford University Heuristic Programming Project*
Finger, J., J., Genesereth, M., R.
1983
- **Meta-Cognition: Reasoning about Knowledge** in *Expert Systems*
Davis, R., Doyle, J., Genesereth, M., R., Goldstein, I., Lenat, D., Shrobe, H.
edited by Hayes-Roth, F., Lenat, D., Waterman, D.
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- **The Use of Hierarchical Design Models in the Automated Diagnosis of Computer Systems**
Genesereth, M., R.
1982
- **Artificial Intelligence Techniques in Macsyma** in *AI Handbook*
Genesereth, M., R.
edited by Feigenbaum, E., Barr, A.
Morgan-Kaufmann.1981: 143–149
- **The Role of Plans in Intelligent Teaching Systems** in *Intelligent Teaching Systems*
Genesereth, M., R.
edited by Sleeman, D., Brown, J., S
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- **Why HPP-80-19, Stanford University Heuristic Programming Project**
Genesereth, M., R.
1980
- **Metaphors and Models**
Genesereth, M., R.
1980
- **Metaphors and Models HPP-80-20, Stanford University Heuristic Programming Project**
Genesereth, M., R.
1980
- **The Use of Semantics in a Tablet-Based Program for Selecting Parts of Mathematical Expressions"**
Genesereth, M., R.
1979
- **The Advanced Scientific Computing Environment Project**
Kulp, J., L., Genesereth, M., R., Edwards, B., E., Holloway, J., T.
1979
- **Automated Consultation for Complex Computer Systems**
Genesereth, M., R.
1979
- **The Canonicity of Rule Systems**
Genesereth, M., R.
1979
- **The Difficulties of Using Macsyma and the Functions of User Aids**
Genesereth, M., R.
1977
- **A Fast Inference Algorithm for Semantic Networks** *Memo, M.I.T. Mathlab Group*
Genesereth, M., R.
1977
- **Multi-Vendor Catalogs: Smart Catalogs and Virtual Catalogs**
Keller, A., M., Genesereth, M., R.