

Lyle H. Ungar

Dept. of Computer and Information Science

University of Pennsylvania

200 S. 33rd St., Philadelphia, PA 19104-6389

ungar@cis.upenn.edu

(215) 898-7449 FAX: (215) 898-0587

<http://www.cis.upenn.edu/~ungar>

Education

- 1979-84 *Massachusetts Institute of Technology* Boston, MA
PhD in Chemical Engineering
- 1975-79 *Stanford University* Stanford, CA
BS in Chemical Engineering (with distinction).

Experience

- 2002-10 *University of Pennsylvania* Philadelphia, PA
Associate Professor of Computer and Information Science
Associate Professor of Chemical and Biomolecular Engineering
Associate Professor of Electrical and Systems Engineering
Associate Professor of Operations and Information Management, Wharton
Associate Professor of Genomics and Computational Biology, SOM
- 2007 *Google* (sabbatical) New York, NY
- 1999 *CMU* (sabbatical) Pittsburgh, PA
- 1990-2002 *University of Pennsylvania* Philadelphia, PA
Associate Professor of Computer and Information Science
Associate Professor of Chemical and Biomolecular Engineering
Associate Professor of Systems Engineering (1996-99)
Associate Professor of Operations and Information Management, Wharton (2000-02)
- 1984-90 *University of Pennsylvania* Philadelphia, PA
Assistant Professor of Chemical Engineering
Assistant Professor of Computer and Information Science (1987-90)
- 1982 *Boston Consulting Group* Boston, MA
(summer) Associate: Strategic business analysis.
- 1979 *Shell Oil*, Westhollow Research Center Houston, TX
(summer) Engineer: Developed computer model for catalytic cracking plant.
- 1976-78 *Chevron USA*, Richmond Refinery Richmond, CA
(summers) Design Engineer (three summer co-op program).

Awards

- Presidential Young Investigator
- National Science Foundation (NSF) Graduate Fellow
- F.E. Terman Award

Research interests

Machine Learning and Database Mining

- *Methods*: machine learning, data mining, text mining
- *Applications*: information extraction, recommender systems, computational biology

Recent Administration at Penn

- Assoc. Director of the Penn Center for Bioinformatics (PCBI) (2004-10)
- Executive Committee, Genomics and Computational Biology (2002-8)
- Admissions Committee, Genomics and Computational Biology (2002-4)
- Director, Executive Masters in Technology Management (EMTM), SEAS and Wharton (1996-2004)
- Director, CIS Graduate Admissions (2000-2)

Public Service

Co-director, Greater Philadelphia Bioinformatics Association (GPBA)

Conferences Chaired

- International Conference on Knowledge Discovery and Data Mining (ACM SIG-KDD), 2006.
- Gordon Research Conference on Statistics in Chemistry and Chemical Engineering, 1997.

Associate Editor

- Journal of Machine Learning Research
- Knowledge and Information Systems

Program committees served on (last three years only)

- American Association for Artificial Intelligence (AAAI)
- ACM Knowledge Discovery and Data Mining (KDD)
- World Wide Web (WWW)
- IEEE International Conference on Data Mining (ICDM)
- International Conference on Machine Learning (ICML)
- SIAM International Conference on Data Mining (ICDM)

Courses taught

Undergraduate

ChE 231	Thermodynamics
ChE 350	Fluid Mechanics
CIS 140/	Cognitive Science
CSE 120	Programming Languages and Techniques
CSE/ChE 270	Expert Systems
CSE 391	Artificial Intelligence
EAS 410	Model Building with Modern Statistics

Graduate

ChE 500	Applied Mathematics I
ChE 501	Applied Mathematics II
ChE 640	Fluid Dynamics
ChE 641	Heat and Mass Transfer
ChE 700	Bifurcation Theory
CIS 520	Machine Learning / Artificial Intelligence
CIS/GCB 535	Introduction to Bioinformatics
CIS 620	Machine Learning
CIS 700	Machine Learning in Bioinformatics
EMTM 554	Data Mining
EMTM 605	Advances in Artificial Intelligence
MGMT 560	Management of Technology
MGMT 732	Technology for Managers

Masters Students

2009	Paramveer Dhillon	"Transfer Learning using Feature Selection."
2003	Alex Vasserman	"Identifying Chemical Names in Biomedical Text: An Investigation of the Substring Co-occurrence Based Approaches"
1988	Michael R. Weinstein Kodak	"Process scheduling using artificial intelligence"

Doctoral Students

current	Paramveer Dhillon (CIS)	"TBA"
current	Perry Evans (GCB)	"TBA"
current	Weichen Wu (CIS)	"TBA"
2010	Ted Sandler (CIS)	"Regularization and Model Selection with Networks of Features"
2009	Bill Kandylas (CIS)	"Online clustering and citation analysis using Streemer"
2008	Gary Morris (CIS)	"Active relational learning for kinship analysis"
2006	Jing Zhou (ESE) Microsoft	"Streaming Feature Selection"

2005	Andrew Schein Amaranth LLC	“Active learning using A-optimality”
2004	Sasha Popescul Yahoo	“Statistical Learning from Relational Databases”
2004	Panos Markopoulos McKinsey	“The Information Gap: Understanding Product Information Dissemination”
2003	Eugene Buehler Merck	“Statistical Models for the analysis of heterogeneous biological data sets”
2002	Roy Kwon U. of Toronto	“Approximate Mechanisms and Algorithms for Combinatorial Auctions” (with G. Anandalingam)
2000	David Parkes Harvard U.	“Iterative Combinatorial Auctions: Achieving Economic and Computational Efficiency”
1999	Rinaldo Jose Oregon	“On the optimal coordination of profit maximizing divisions using auctions and price theory”
1995	Evi Gazi Chem. Ind. Inst. Toxicology	“Verification of controllers for incompletely-known chemical plants” (with W.D. Seider)
1995	Jack Vinson Pharmacia	“Automated first principles reasoning using qualitative and quantitative models”
1993	Bill Foster BMS	“The significance of neuronal ionic conductances in the cardiorespiratory nucleus of the solitary tract of the rat and in Hodgkin-Huxley models”
1993	Catherine Catino Air Products	“Automated modeling of chemical plants with application to hazard and operability studies”
1993	Dimitris Psychogios JP Morgan	“Process control using structured neural networks”
1990	Stephen Grantham Merck	“Automated reasoning from first principles using qualitative physics”
1989	Charles X. Ling U. Western Ontario	“Inductive learning and invention in domains with primitive recursive structures”
1989	Paul P. Durand Exxon-Mobil	“Percolation and transport in random media with application to high temperature superconductors”
1989	Thomas J. Balsano Amoco	“Unidirectional solidification of an anisotropic binary alloy”
1989	Ralph Gonzales U. Rutgers, Camden	“Learning by progressive subdivision of state space”
1988	Steven J. Weinstein Kodak	“The low flow rate limit for immiscible fluid systems in narrow gaps”

1988 Francis X. Kelly “Growth morphologies in rapid solidification”
Exxon-Mobil

Publications - Refereed Conference Proceedings

- Discovery of Significant Emerging Trends, Saurabh Goorha and Lyle Ungar *ACM Knowledge Discovery and Data Mining (KDD)* 2010
- Feature Selection using Multiple Streams, Paramveer Dhillon, Dean Foster and Lyle Ungar. *Proceedings of The Thirteenth International Conference on Artificial Intelligence and Statistics (AISTATS)* 2010
- Multi-Task Feature Selection using the Multiple Inclusion Criterion (MIC) Paramveer Dhillon, Brian Tomasik, Dean Foster and Lyle Ungar. *ECML-PKDD (European Conference on Machine Learning)*, Bled, Slovenia, Sept. 2009 (Acceptance Rate: 24.9)
- Transfer Learning, Feature Selection and Word Sense Disambiguation Paramveer Dhillon, and Lyle Ungar. *ACL-IJCNLP (Annual Meeting of the Association of Computational Linguistics)*, Singapore, Aug. 2009
- Gamma-band ECoG correlates of human cognitive representations. Jacobs, J., Ungar, L.H. and Kahana, M.J. Program No. 279.2. Chicago, IL: *Society for Neuroscience*, 2009.
- Efficient Clustering of Web-Derived Data Sets. Luis Sarmiento, Alexander Kehelenbeck, Eugenio Oliveira, and Lyle Ungar *International Conference on Machine Learning and Data Mining (MLDM)* 2009
- An Approach to Web-scale Named-Entity Disambiguation. Luis Sarmiento, Alexander Kehelenbeck, Eugenio Oliveira, and Lyle Ungar *International Conference on Machine Learning and Data Mining (MLDM)* 2009
- Learning with Locally Linear Feature Regularization. Ted Sandler, John Blitzer, Lyle Ungar NIPS-08, 2008
- Protein-Protein Interaction Network Alignment by Quantitative Simulation. P Evans, T Sandler, L Ungar *Proceedings of the 2008 IEEE International Conference on Bioinformatics and Biomedicine (BIBM '08)*, 2008
- Multiway Clustering for Creating Biomedical Term Sets. V Kandylas, L Ungar, T Sandler, S Jensen *Proceedings of the 2008 IEEE International Conference on Bioinformatics and Biomedicine (BIBM '08)*, 2008
- Using Text Mining to Analyze User Forums R. Feldman, M. Fresko, J. Goldenberg, O. Netzer, L. Ungar *5th IEEE ICSSM'08, Melbourne*, 2008.
- Web-Scale Named Entity Recognition Casey Whitelaw, Alex Kehlenbeck, Nemanja Petrovic and Lyle Ungar *ACM 17th Conference on Information and Knowledge Management (CIKM)*, 2008
- Efficient Feature Selection in the Presence of Multiple Feature Classes Paramveer S. Dhillon, Dean Foster and Lyle H. Ungar *IEEE International Conference on Data Mining (ICDM)*, 2008.
- Scalable Methods for Extracting Named Entities from the Web Casey Whitelaw, Alex Kehlenbeck, Luis Sarmiento, Lyle Ungar *INFORMS* 2008 (abstract only)
- In defense of L_0 . Dongyu Lin, Dean Foster and Lyle Ungar *ICML-2008 Workshop on Sparse Optimization and Variable Selection*, 2008.

- Information Theory-Based Feature Selection Dean P. Foster and Lyle H. Ungar *Fourteenth Yale Workshop on Adaptive and Learning Systems*, 2008
- Learning with Locally Linear Feature Regularization Ted Sandler, John Blitzer, Lyle Ungar *Snowbird Learning Workshop*, 2008
- Maximal Subset Feature Selection for BioInformatics Dean P. Foster, Anna Goldenberg and Lyle H. Ungar *Snowbird Learning Workshop*, 2008
- Finding cohesive clusters for analyzing knowledge communities, Vasileios Kandylas, S. Phineas Upham, and Lyle H. Ungar, *Seventh IEEE International Conference on Data Mining (ICDM)*, Oct 2007.
- Extracting Product Comparisons from Discussion Boards, Feldman et al. *Seventh IEEE International Conference on Data Mining (ICDM)*, Oct 2007.
- Innovating Knowledge Communities, Phin Upham, Lori Rosenkopf, and Lyle Ungar, 2007 Academy of Management Meeting, Philadelphia, PA (selected for the “Best Paper Proceedings of the 2007 Academy of Management Meeting.”)
- An Empirical Study of the Behavior of Active Learning for Word Sense Disambiguation, J. Chen, A. Schein, L. Ungar and M. Palmer *HLT-NAACL 06*, 2006.
- Is Online Product Information Driven by Quality or Differentiation?, P.M. Markopoulos and R. Aron and L.H. Ungar. *proceedings of the International Conference of Information Systems (ICIS-2005)*, 2005.
- Cluster-based Concept Invention for Statistical Relational Learning, A. Popescul and L. Ungar, *KDD-2004*, 2004.
- Genomic Characterization of Synaptic Proteins, SynapseDB, M. Bucan et al. *The Biology of Genomes (Cold Spring Harbor May, 2004)*. (abstract only)
- Integrated Annotation for Biomedical Information Extraction , S. Kulick, A. Bies, M. Libeman, M. Mandel, R. McDonald, M. Palmer, A. Schein and L. Ungar, *HLT/NAACL, Boston*, May, 2004.
- Statistical Relational Learning for Document Mining, A. Popescul, L. H. Ungar, S. Lawrence and K.M. Pennock. *International Conference on Data Mining (ICDM-2003)*, 2003.
- Using Reinforcement Learning to Refine Autonomous Robot Controllers, G. Grudic, V. Kumar and L. Ungar, *International Conference on Intelligent Robots and Systems (IROS)*, 2003.
- Mixtures of Conditional Maximum Entropy Models, D. Pavlov, A. Popescul, D.M. Pennock and L.H. Ungar, *International Conference on Machine Learning (ICML)*, 2003.
- Structural Logistic Regression for Link Prediction, A. Popescul and L. H. Ungar, *KDD Workshop on Multi-Relational Data Mining* and a similar paper, Statistical Relational Learning for Link Prediction. A. Popescul and L. H. Ungar, *IJCAI-03 Workshop on Relational Learning*, 2003.
- A Combinatorial Auction-Based Method for Supply Chain Management, R. Kwon and L. Ungar, *Institute for Operations Research and the Management Sciences (INFORMS)*, 2003.
- Static and Dynamic Analysis of the Internet’s Susceptibility to Faults and Attacks, S-T. Park, A. Khrabrov, D.M. Pennock, S. Lawrence, C.L. Giles and L.H. Ungar, *Infocom*, 2003.
- A Generalized Linear Model for Principal Component Analysis of Binary Data, A. I. Schein, L. K. Saul and L. H. Ungar, *Proc. 9th International Workshop of AI and Statistics*, Jan 3-6, 2003.

- Rates of Convergence of Performance Gradient Estimates Using Function Approximation and Bias in Reinforcement Learning, G. Grudic, and L. Ungar, *NIPS 14*, 2002.
- Dual Pricing and Information Deficit in Electronic Markets, P. Markopoulos, R. Aron and L. H. Ungar, *International Conference on Information Systems (ICIS) 2003*; earlier version appeared in *Workshop on Information Systems and Economics (WISE)*, 2002.
- Towards Structural Logistic Regression: Combining Relational and Statistical Learning, A. Popescul, L. H. Ungar, S. Lawrence and D. M. Pennock, *Workshop on Multi-Relational Data Mining, at the Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2002)*, 2002.
- Methods and Metrics for Cold-Start Recommendations, A. I. Schein, A. Popescul, L. H. Ungar and D. M. Pennock, *ACM Special Interest Group on Information Retrieval SIGIR-2002*, August 2002.
- Pricing Price Information in E-commerce, P.M. Markopoulos and L.H. Ungar, *Proceedings of the ACM Conference on Electronic Commerce (EC01)*, Tampa, Florida, October 2001.
- Towards Learning by Ontological Leaps, L. Ungar and D. Foster, *Snowbird Learning Workshop*. 2001.
- A Primal-Dual Algorithm for Winner Determination in Combinatorial Auctions, R. Kwon, G. Anandalingam and L.H. Ungar, *INFORMS*, 2001.
- Maximum Entropy Methods for Biological Sequence Modeling, Buehler, E. and L.H. Ungar, *BIOKDD 2001 workshop*, 2001.
- Generative Models for Cold-Start Recommendations, A. Schein, A. Popescul, L. H. Ungar and D. M. Pennock, *Workshop on Recommender Systems, SIGIR-2001*, 2001
- Exploiting Multiple Secondary Reinforcers in Policy Gradient Reinforcement Learning, G. Z. Grudic and L. H. Ungar, *IJCAI 2001*, 2001.
- Probabilistic Models for Unified Collaborative and Content-Based Recommendation in Sparse-Data Environments, A. Popescul, L. H. Ungar, D. M. Pennock and S. Lawrence, *Uncertainty in AI (UAI 2001) Conference*, August 2001
- Efficient Reinforcement Learning for Robots, G. Z. Grudic and L. H. Ungar, *Yale Workshop on Adaptive and Learning Systems*, June, 2001.
- Iterative Combinatorial Auctions: Theory and Practice. D. C. Parkes and L.H. Ungar, *Proc. 18th National Conference on Artificial Intelligence, (AAAI-00)*, 74-81. 2000.
- Preventing Strategic Manipulation in Iterative Auctions: Proxy-Agents and Price-Adjustment, D. C. Parkes and L.H. Ungar, *Proc. 18th National Conference on Artificial Intelligence, (AAAI-00)*, 82-89. 2000.
- Localizing Search in Reinforcement Learning, G. Z. Grudic and L. H. Ungar, *Proc. 18th National Conference on Artificial Intelligence, (AAAI-00)*, 590-595. 2000.
- Localizing Policy Gradient Estimates to Action Transitions, G. Z. Grudic and L. H. Ungar, *International Conference on Machine Learning (ICML2000)*, 343-350. 2000.
- Efficient Clustering of High-Dimensional Data Sets with Application to Reference Matching, A. McCallum, K. Nigam and L. Ungar, *KDD-2000*, 2000.
- Clustering and Identifying Temporal Trends in Document Databases, A. Popescul, G. W. Flake, S. Lawrence, L.H. Ungar and C. L. Giles, *Proc. IEEE Advances in Digital Libraries 2000 Conference*, 2000.

- String Edit Analysis for Merging Databases, J.J. Zhu and L.H. Ungar, *Proc. KDD-2000 Workshop on Text Mining*, 2000.
- Accounting for Cognitive Costs in On-line Auction Design, D. C. Parkes, L. H. Ungar and D. P. Foster, *LNAI 1571 Agent mediated Electronic Commerce (AMEC-98)*, pp 25–40, Springer Verlag, 1999.
- Clustering methods for collaborative filtering L.H. Ungar and D.P. Foster *AAAI Workshop on Recommendation Systems*, 1998
- A formal statistical approach to collaborative filtering L.H. Ungar, D.P. Foster *CONALD98*, 1998
- Auction-driven coordination for plantwide optimization, R.A. Jose and L.H. Ungar, *Foundations of Computer-Aided Process Operation FOCAPO*, 1998.
- Learning and Adaption in Multiagent Systems, D.C. Parkes and L. H. Ungar, *AAAI97 Workshop on MultiAgent Learning*, 1997.
- Characterizing the generalization performance of model selection strategies, D. Schuurmans, D.P. Foster and L.H. Ungar, *Proceedings of 1997 ML/COLT*, 1997.
- Learning and Adaption in Multiagent Systems, D.C. Parkes and L. H. Ungar, *AAAI97 Workshop on MultiAgent Learning*, 1997.
- Automatic Analysis of Monte-Carlo Simulations of Dynamic Chemical Plants, E. Gazi, L. H. Ungar, W. D. Seider and B. J. Kuipers, *Proceedings of the ESCAPE 6 Symposium, Rhodes, Greece*, May, Pergamon Press, 1996.
- Controller verification for polymerization reactors, E. Gazi, W.D. Seider and L.H. Ungar, *Proc. Intelligent Systems in Process Engineering (ISPE '95)*, 1995.
- Neural Networks for Process Control, L.H. Ungar, E. Hartman and J. Keeler, *Proc. Intelligent Systems in Process Engineering (ISPE '95)*, 1995.
- A Statistical Basis for Using Radial Basis Functions for Process Control, L.H. Ungar and R.D. DeVeaux, *Proceedings of the ACC*, 1995.
- Active Exploration and Learning in Real-Valued Spaces using Multi-Armed Bandit Allocation Indices, Salganicoff, M. and L.H. Ungar, *Proc. 12th Intl. Conf. on Machine Learning*, July, 1995.
- Statistical Approaches to Fault Analysis in Multivariate Process Control, R.D. DeVeaux, L.H. Ungar and J.M. Vinson, *Proceedings of the ACC*, 1994.
- Active Exploration-Based ID-3 Learning for Robot Grasping, M. Salganicoff, L.G. Kunin and L.H. Ungar, *Proceedings of the Workshop on Robot Learning, 11th Intl. Conf. on Machine Learning*, July, 1994.
- Control of Nonlinear Processes Using Qualitative Reasoning, E. Gazi, W.D. Seider and L.H. Ungar, *Proceedings of ESCAPE 3*, 1994.
- Controller Verification Using Qualitative Reasoning, E. Gazi, L.H. Ungar and W.D. Seider, *ADCHEM Proceedings*, 1994.
- Stability of Neural Net Based Model Predictive Control, J.W. Eaton, J.B. Rawlings and L.H. Ungar, *Proceedings of the ACC*, 2481-85, 1994.
- The Role of Baroreceptor Resetting in Habituating Control of Blood Pressure, S.R. Carden, L.H. Ungar, W.C. Rose and J.S. Schwaber, *Proceedings of the ACC*, 87-91, 1994.

- Dynamic Fault Detection with the Automatic Process Evaluator, J.M. Vinson and L.H. Ungar, *CIMPRO Proceedings*, 295-301, 1994.
- Radial Basis Function Neural Networks for Process Control, L.H. Ungar, T. Johnson and R.D. DeVeaux, *Computer-Integrated Manufacturing in the PROcess industries (CIMPRO) Proceedings*, 357-364, 1994.
- Controller verification using qualitative reasoning, E. Gazi, W.D. Seider and L.H. Ungar, *Proceedings of 2nd IFAC workshop on computer software structure integ. AI/KBS Sys. In Proc. Cont.* Lund, Sweden, 1994.
- Control of Nonlinear Processes using Qualitative Reasoning, E. Gazi, W.D. Seider and L.H. Ungar, *Proceedings of 1993 ESCAPE in Computers and Chem. Engr.*, 18, S189-S193, 1994.
- The Automatic Process Evaluator, J.M. Vinson and L.H. Ungar, *Proceedings of the Second Intl. Conf. on FOCAPO*, ed. Rippin et al., CACHE, 443-449, 1993.
- QMIMIC: Model-based Monitoring and Diagnosis, J.M. Vinson and L.H. Ungar, *Proceedings of the ACC* 1880-1884, 1993.
- A Tale of Two Nonparametric Estimation Schemes: MARS and Neural Networks, R.D. DeVeaux, D.C. Psychogios and L.H. Ungar, *4th Intl. Conf. on Artificial Intelligence and Statistics*, Jan. 1993.
- Neural Control and Adaptation in Blood Pressure Control, L.H. Ungar, J.S. Schwaber and W.R. Foster, *Proceedings of the Yale Workshop on Adaptive and Learning Systems*, 111-115, 1992.
- Matching Neural Models to Experiment, W.R. Foster, J.F.R. Paton, J.J. Hopfield, L.H. Ungar and J.S. Schwaber, *Proceedings of Computation and Neural Systems Meeting*, San Francisco, 1992.
- Fault Detection and Diagnosis using Qualitative Modelling and Interpretation, J.M. Vinson and L.H. Ungar, in *On-line Fault Detection and Supervision in the Chemical Process Industries* Preprints of the IFAC Symposium, Newark, Delaware, USA April 22-24, 1992, Ed. P.S. Dhurjati, pp. 81-86, 1992.
- Process Modeling Using Structured Neural Networks, D.C. Psychogios and L.H. Ungar, *Proceedings of the ACC* 1917-1921 (1992).
- Nonparametric System Identification: A Comparison of MARS and Neural Networks, D.C. Psychogios, R.D. DeVeaux and L.H. Ungar, *Proceedings of the ACC* 1436-1440, 1992.
- Nonlinear Internal Model Control Using Neural Networks, D.C. Psychogios and L.H. Ungar, *Proceedings of the IEEE Fifth Int'l. Symposium on Intelligent Control*, September, 1990.
- Nonlinear Internal Model Control Using Neural Networks, D.C. Psychogios and L.H. Ungar, *Proceedings of the Sixth Yale Workshop on Adaptive and Learning Systems*, Yale, August, 1990.
- A Bioreactor Benchmark for Adaptive Network-based Control, L.H. Ungar, *Proceedings of the 1988 NSF Workshop on Neural Networks for Robotics* MIT Press, 1990.
- Expert Systems for Engineering Design and Manufacturing, L.H. Ungar, *Proceedings of the Fifth National Conference on University Programs in Computer-Aided Engineering, Design and Manufacturing* 114-117, 1987.
- Towards an Expert Multivariable Controller, V. Tzouanas, L.H. Ungar and C. Georgakis, *IFAC Proceedings*, 1987.
- Pattern Formation in Directional Solidification: The Nonlinear Evolution of Cellular Melt/Solid Interfaces, R.A. Brown and L.H. Ungar, *Aachen Workshop on Microgravity and Directional Solidification* Ed. P. Sahm, 1984.

- A Model of an Artificial Pancreas: Transient Diffusion in a Two Phase Composite with a Glucose Dependent Insulin Source at the Interface, C.K. Colton and L.H. Ungar, *Proceedings of the N.E. Bioengineering Conf.* 547-522, 1980.

Publications – Refereed Publications

- Sequence alignment reveals possible MAPK docking motifs on HIV proteins. Perry Evans Ahmet Sacan, Lyle Ungar, Aydin Tozeren *PLOS ONE*, 28 Jan 2010.
- Positioning Knowledge: Schools of Thought and New Knowledge Creation. S. Phineas Upham, Lori Rosenkopf and Lyle H. Ungar, *Scientometrics* 83:2, (2010), pp. 555.
- Prediction of HIV-1 virus-host protein interactions using virus and host sequence motifs. Perry Evans, Will Dampier, Lyle Ungar and Aydin Tozeren *BMC Medical Genomics* 2009 2:27.
- Host sequence motifs shared by HIV predict response to antiretroviral therapy. William Dampier, Perry Evans, Lyle Ungar and Aydin Tozeren *BMC Medical Genomics* 2009 2:47.
- Information Market for Product Attributes: A Game Theoretic, Dual Pricing Mechanism. P.M. Markopoulos and R. Aron and L.H. Ungar *Decision Support Systems* 49 (2010) 187199
- A predictive model for identifying mini-regulatory modules in the mouse genome. Mahesh Yaragatti, Ted Sandler and Lyle Ungar *Bioinformatics* 2008; doi: 10.1093/bioinformatics/btn622
- Finding cohesive clusters for analyzing knowledge communities. Vasileios Kandylas, S. Phineas Upham and Lyle H. Ungar, *IEEE Knowledge and Information Systems* 17(3) p. 335, (2008)
- A Model of Market Power and Efficiency in Private Electronic Exchanges. Ravi Aron , Lyle Ungar, Annapurna Valluri, *European Journal of Operational Research, (EJOR)* 187, 922-942, 2008.
- MetaProm: a neural network based meta-predictor for alternative human promoter prediction. Junwen Wang, Sridhar Hannenhalli and Lyle H Ungar *BMC Genomics* 8:374, 2007.
- Active Learning for Logistic Regression: An Evaluation. A. Schein and L. Ungar, *Machine Learning Journal*, 68(3): 235-265, 2007.
- Streaming Feature Selection. J. Zhou, D. Foster, R. Stine, and L. Ungar *Journal of Machine Learning Research (JMLR)* 7(Sep):1861–1885, 2006.
- Identification of potential CSF biomarkers in ALS. G. M. Pasinetti, L. H. Ungar et al. *Neurology*, February 15, 2006.
- Automatic term list generation for entity tagging. Ted Sandler, Andrew I. Schein, and Lyle H. Ungar *Bioinformatics*, October 25, 2005.
- Iterative Combinatorial Auctions with Bidder-determined Combinations. R. Kwon, A. Anandalingam and L. Ungar, *Management Science*, 51(3), 407-418, 2005.
- Using Prior Knowledge to Improve Genetic Network Reconstruction from Microarray Data, A. Bahl, P. Le, and L. Ungar, *In Silico Biology (ISB)*, 2004
- The CRASSS Algorithm For Integrating Annotation Data With Hierarchical Clustering Results, E. C. Buehler, J. R. Sachs, K. Shao, A. Bagchi, L. Ungar, *Bioinformatics*, 1367-4803, 2004.
- CROC: A New Metric for Recommender System Evaluation. A. I. Schein, A. Popescul, L. H. Ungar and D. M. Pennock, *Journal of Electronic Commerce Research* 5(1): 51-74, 2005.

- Dual Pricing in Electronic Markets, P. Markopoulos, R. Aron and L. H. Ungar, *Proc. International Conference on Information Systems (ICIS-2003)* December, 2003.
- Chloroplast Transit Peptide Prediction: a Peek Behind the Black Box, A.I. Schein, J. C. Kissinger and L. H. Ungar, *Nucleic Acids Research Methods*, **29**(16) e82. 2001.
- Pricing Interprocess Streams Using Slack Auctions, R. A. Jose and L.H. Ungar, *AIChE Journal*, 575-587, March, 2000.
- Estimating Monotonic Functions and Their Bounds, H. Kay and L.H. Ungar, *AIChE Journal*, 46(12), 2425-2434, 2000.
- Hybrid neural network models for environmental process control, R.D. De Veaux, R. Bain and L.H. Ungar, *Environmetrics* **10**(3), 225-236, 1999.
- Prediction Intervals for Neural Networks via Nonlinear Regression, R. De Veaux, J. Schumi, J. Schweinsberg, D. Shellington and L.H. Ungar, *Technometrics*, **40**(4) 273-282, 1998.
- A non-parametric Monte-Carlo technique for controller verification, E. Gazi, W. D. Seider and L. H. Ungar, *Automatica* **33**(5), 901-906, 1997.
- Active Learning for Vision-Based Robot Grasping, M. Salganicoff, L.H., Ungar and R. Bajcsy, *Machine Learning Journal* **23**251-78, 1996.
- Verification of controllers in the presence of uncertainty: application to styrene polymerization, E. Gazi, W.D. Seider and L.H. Ungar, *Industrial and Engineering Chemistry Research*, **35** (7) 2277-2287, 1996.
- Automatic-analysis of monte-carlo simulations of dynamic chemical plants, E. Gazi, L.H. Ungar, W.D. Seider and B.J. Kuipers, *Computers & Chemical Engineering* **20** S987-S992, 1996.
- Control of the physical world by intelligent agents: putting the pieces together, B. Kuipers and L.H. Ungar, *AI Magazine* 16:7-8 Spring 1995.
- Dynamic Process Monitoring and Fault Diagnosis with Qualitative Models, J.M. Vinson and L.H. Ungar, *IEEE Transactions on Man, Machines and Cybernetics*, 25(1), 181-189, 1995.
- A Model-Based Approach to Automated Hazard Identification of Chemical Plants, C.A. Catino and L.H. Ungar, *Computers and Chem. Engr.*,41(1), 97-109, 1995.
- Comment on "Neural Networks and Related Methods for Classification" R.D. De Veaux, L.H. Ungar, D.J. Darken, *Journal of the Royal Statistical Society, Series B*, 56(3), 446-447. 1994.
- SVD-Net: An Algorithm which Automatically Selects Network Structure, D.C. Psychogios and L.H. Ungar, *IEEE Transactions on Neural Networks*, 5(3) 513-515, 1994.
- Significance of conductances in Hodgkin-Huxley models, W.R. Foster, L.H. Ungar and J.S. Schwaber, *Journal of Neurophysiology*,70(6) 2502-2518, 1993.
- A Comparison of Two Nonparametric Estimation Schemes: MARS and Neural Networks, R.D. De Veaux, D.C. Psychogios and L.H. Ungar, *Computers and Chem. Engr.*, 17(8), 819-837, 1993.
- A Hybrid Neural Network - First Principles Approach to Process Modeling, D.C. Psychogios and L.H. Ungar, *AIChE Journal*, 1499-1512, October, 1992.
- Using Radial Basis Functions to Approximate a Function and Its Error Bounds, J.A. Leonard, M.A. Kramer and L.H. Ungar, *IEEE Transactions on Neural Networks*, 3(4) 624-627, 1992.

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Patents

- US 5,335,391 Method and apparatus for pattern mapping system with self-reliability check
M.A. Kramer, J.A. Leonard and L.H. Ungar
- US 5,951,623 Lempel-Ziv data compression technique utilizing a dictionary prefilled with frequent letter combinations, words and/or phrases
J.C Reynar, F. Herz, J. Eisner and L. Ungar
- US 5,835,087 System for general of object profiles for a system for customized electronic identification of desirable objects
F. Herz, J. Eisner and L. Ungar
- US 5,758,257 System and method of scheduling broadcast of and access to video program and other data using customer profiles
F. Herz, L. Ungar, J. Zhang, D. Wachob and M. Salganicoff
- US 5,754,939 Sytem for generation of user profiles for a sysem for customized electronic identification of desirable objects
F. Herz, J. Eisner L. Ungar, M. Marcus
- US 6,088,722 System and method for scheduling broadcast of and access to video programs and other data using customer profiles (divisional of the 5,835,087)
F. Herz, L. Ungar, J. Zhang, D. Wachob and M. Salganicoff
- US 6,020,883 System and method of scheduling broadcast of and access to video program and other data using customer profiles
F. Herz, L. Ungar, J. Zhang, D. Wachob and M. Salganicoff
- US 20,030,135,445 Stock market prediction using natural language processing
F. Herz, L. Ungar, J. Eisner and P. Labys
- US 20,020,184,102 Selling price information in e-commerce
P. Markopoulos and L. Ungar