

Dr. Lorien Pratt

Curriculum Vita

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SUMMARY

Co-Founder and CTO of Quantellia, LLC. Professional market and academic researcher, developer, entrepreneur with multi-industry background including the human genome project, telecommunications, and computer science. Known for pioneering work on neural networks – especially neural network transfer – applied to a variety of arenas including forensic hair recognition, ribosomal binding site detection, hazardous waste remediation, telecommunications.

EDUCATION

- Ph.D., Computer Science, Rutgers University, 5/93. Thesis: *Transferring previously learned back-propagation neural networks to new learning tasks.*
- M.S., Computer Science, Rutgers University, 5/88.
- A.B., Computer Science, Dartmouth College, 5/83.

CONSULTING

A variety of engagements including the following:

- Regular invited speaker to user groups, executive roundtables, keynotes, webinars and workshops for organizations and companies like HP, Unisys, the TM Forum, Comptel, SAS.
- History of strategic consulting in analytics and OSS/BSS to companies and organizations like the US Department of Defense, ConceptWave, the Colorado Bureau of Investigation, Sun, BEZ Systems, IBM, Comptel, HP, Amdocs, Telcordia.
- Grew Frost & Sullivan OSS/BSS consulting practice by over 400%.

(full project list and sample media available upon request, or by googling “lorien pratt”)

PUBLICATIONS AND PRESENTATIONS

Book

S. Thrun and L. Pratt, eds. *Learning to Learn*. Kluwer Academic Press, 1996.

Special Invited Editor for Academic Journals

- Lorien Pratt, editor. Connection Science, Special Issue: Reuse of Neural Networks Through Transfer. Volume 8, Number 2. June 1996.
<http://www.catchword.co.uk/titles/carfax/09540091/v8n2/contp1-1.htm>
- S. Thrun and L. Pratt, editors. Machine Learning. *Second Special Issue on Inductive Transfer*, Dordrecht, 1997. Kluwer Academic Press.¹

Webinars

- Mark Zangari and Lorien Pratt, 2010: *Conquering Complexity*. See <http://slidesha.re/df0iBF>
- Lorien Pratt, Susan McNeice, Tim McElligott. *Profitable IPTV through analytics*.
<http://tinyurl.com/789n54>. June 2007.

¹ <http://www.ist-world.org/ResultPublicationDetails.aspx?ResultPublicationId=83df8c5e07814047b3556a0a483a76ae>

- Lorien Pratt. *From Information Technology to Proactive Business Technology*. http://www.bez.com/bez-on_demand_reg.htm . June 2007.
- Lorien Pratt. *Data Integration for OSS/BSS*. <http://www.progress.com/datatend/news/webinars/index.ssp> . May 2007.

White Papers

- Emsley *et al*, 2011: *Navigating the telecom ship: The CEM Control Center Catalyst*. <http://www.quantellia.com/Data/CEMControlCenterCatalystTMFNice2010b.pdf>
- Pratt, 2010: *Common Information Modeling in a SOA Environment*.²
- Pratt & Zangari, 2008: *Overcoming the Decision Complexity Ceiling through Design*. http://www.quantellia.com/Data/WP-OvercomingComplexityv1_1.pdf
- Pratt & Zangari, 2008: *High Performance Decision Making: A Global Study*.
- Pratt & Ruzicka, 2006: *Telecom Information Management and Analysis (TIMA): Challenges and Solutions*. Reviewed at <http://www.ossnewsreview.com/telecom-oss/white-paper-addresses-telecommunications-information-management-architecture-tima/>

Industry Journal and Newspaper Publications

- TM Forum *Case Study Handbook*. 2011. (pdf available from the author upon request)
- Lorien Pratt and Mark Zangari, *Leading the way to complex business models*. Telecom Asia. August 2009. <http://www.quantellia.com/Data/200908PrattZangariComplexBusinessModels.pdf>
- Lorien Pratt, *IT Strategic update: Managing by the numbers*. TM Forum *Perspectives*, 2011. (pdf available from the author upon request)
- Lorien Pratt, *It is what you think*. TM Forum *Perspectives*, 2011. (pdf available from the author upon request)
- Lorien Pratt, *Cloud: creating two-side enterprise apps*. TM Forum *Perspectives*, 2011. (pdf available from the author upon request)
- Lorien Pratt and Mark Zangari, *Making good decisions*. The Straits Times, Singapore. August 6, 2009. (pdf available from the author upon request)
- Lorien Pratt and Mark Zangari, *The New Science of Decision Engineering*. Telecom Asia. September 2008. http://www.telecomasia.net/article.php?id_article=10235
- Lorien Pratt and Nancee Ruzicka, *Building Back Office Brawn, Is Your House In Order?* Telecommunications Magazine, Cover story for NxtComm show issue. May 1, 2006. http://www.telecoms-mag.com/Americas/article.asp?HH_ID=AR_2018
- Shira Levine and Lorien Pratt, *Revenue Assurance Stops the Leak*. Telephony Magazine. October 1, 2005. http://www.telecommagazine.com/Americas/article.asp?HH_ID=AR_1185
- Dan Baker and Lorien Pratt, *From Customer Care to Customer Assurance*. Billing World and OSS Today magazine. May 2004. <http://www.billingworld.com/archivedetail.cfm?archiveId=7537&hl>

Market Research Reports

Many reports, including the following:

Lead author on:

- *Stratecast OSS Predictions report, for 2005, 2006, 2007*
- *Service Oriented Architectures and Best Practices for Telecom*
- *Revenue Assurance Sector Assessment*

² See https://secure.progress.com/login/datatend-landing/whitepapers/stratecast-information-modeling-report.html?TYPE=33554433&REALMOID=06-000012ce-8e9d-1ba7-b384-832b449eff3f&GUID=&SMAUTHREASON=0&METHOD=GET&SMAGENTNAME=uxwcmprod1-progress&TARGET=-SM-HTTP%3a%2f%2fwww%2eprogress%2ecom%2fam%2fsec%2fprocessRequest%3ftargetUrl%3d%2fdocs%2fgated%2fwhitepapers%2fdatatend%2fcommon_information_modeling_soa%2epdf%3f

- *Assessment of CSG Systems*
- *The Value of OSS/BSS to Service Providers Worldwide: Results of a Stratecast Survey*
- *OO for OSS/BSS: Rethinking OSS/BSS from an Object Oriented Perspective to Support Service Provider Strategic Priorities*
- *X Factor Tech: Search and Web Innovations in a Multi-service Content Environment*
- *Telecom Information Management and Analysis: A New OSS/BSS Function*
- *OSS/BSS Data Migration: A Critical, and Often Overlooked, Enabler of OSS Consolidation*
- *Reducing OSS/BSS Integration Costs Through Common Infrastructure Modeling*
- *Portal's Prospects: Not As Bleak As The Numbers Show*
- *OSS Sector Analysis: Mediation*

Significant contributor to:

- *Inventory Management Sector Assessment*
- *Keeping Up With the Network – New Strategies for Telecommunications Network Configuration Management*
- *Automating The Design and Assign Process*
- *OSS for IPTV: Alcatel's IPTV/ Triple Play BSS/OSS Solution*
- *Billing for Broadband Services*
- *Outsourcing, M&A, and Other Survival Strategies for OSS Vendors: Assessment of Evolving Systems*
- *OSS Industry Consolidation*

Lead author on reports written as freelance contractor:

- *Telecom Customer Assurance: Enhancing Profits Through Churn Management, CRM, Data Warehouses and Analytic Software & Services*
- *Revenue Assurance, Mediation, and Cost Management Solutions in Telecommunications.*

Ghost writer for reports on a variety of topics, including revenue assurance, telecom advertising, customer experience management, configuration architecture, plus a variety of product brochures and web content.

Refereed Academic Publications

- M.S. Verma, L. Pratt, C. Ganesh, C. Medina, *Hair-MAP: a prototype automated system for forensic hair comparison and analysis*, *Forensic Science International* 129 (3) (2002) pp. 168-186.
- Sebastian Thrun and Lorien Pratt. *Learning to Learn: Introduction and Overview*. Chapter 1 of *Learning to Learn*. Kluwer Academic Publishers, 1996.
- Pratt, L. and Jennings, B. *A survey of transfer between connectionist networks*. *Connection Science*, 8(2), 1996:163-184. See citations online at <http://citeseer.nj.nec.com/context/168083/0>
- Lorien Pratt and Barbara Jennings. *A survey of Connectionist Network Reuse Through Transfer*. Chapter 2 of *Learning to Learn*. Kluwer Academic Publishers, 1996.
- Manavendra Misra, Lorien Y. Pratt, Charles Farris, Richard O. Hansen, *Neural Network Analysis for Hazardous Waste Characterization*. Chapter 3 of *Applications of Neural Networks in Environment, Energy, and Health*. Editors: Paul E. Keller, Sherif Hashem, Lars J. Kangas, Richard T. Kouzes. 1996.
<http://www.emsl.pnl.gov:2080/proj/neuron/workshops/WEEANN95/proceedings.html>
- C. Medina and L. Pratt. *NNES: A Neural Network Explanation System for Transforming Trained Neural Networks into Decision Trees*. Proceedings of the Twelfth National Conference on International Joint Conference on Artificial Intelligence (1995).
<http://citeseer.nj.nec.com/medina95nne.html>
- C. Medina, L. Pratt, and C. Ganesh. *Development of an Intelligent Forensic System for Hair Analysis and Comparison*. Proceedings of the Twelfth National Conference on Artificial Intelligence, volume 2, AAAI. July 1994.
- Lorien Y. Pratt, Lauren L. Tracy, and Michiel Noordewier. *Back-Propagation Learning on*

Ribosomal Binding sites in DNA Sequences using Preprocessed Features. Proceedings of the IEEE international conference on neural networks, IEEE world congress on Computational Intelligence, Volume 5; IEEE, June 1994. Pages 3332-3335.

- Lorien Y. Pratt and Steve Nicodemus. *Case studies in the use of a hyperplane animator for neural network research*, 1994. Proceedings of the IEEE international conference on neural networks, IEEE world congress on computational intelligence, Volume 1; IEEE, June 1994. Pages 78-83 <http://citeseer.nj.nec.com/81170.html>
- Pratt L.Y., Christensen A.N.: *Relaxing the Hyperplane Assumption in the Analysis and Modification of Back-propagation Neural Networks*, in Trappl R.(ed.), Cybernetics and Systems '94, World Scientific Publishing, Singapore, pp.1711-1718, 1994. Citations listed online at <http://citeseer.nj.nec.com/check/433281>.
- L. Y. Pratt and V. I. Gough. *Improving discriminability based transfer by modifying the IM metric to use sigmoidal activations*, Cybernetics and Systems '94, World Scientific Publishing, Singapore, 1994. <http://citeseer.nj.nec.com/61824.html>.
- L. Y. Pratt. *Discriminability-Based transfer between neural networks*. In C. L. Giles and S. J. Hanson and J.D. Cowan, editors, Advances in Neural Information Processing Systems 5. Morgan Kaufmann, San Mateo, CA, 1993. Pages 204-211. <http://citeseer.nj.nec.com/170939.html>.
- Sowmya Ramachandran and Lorien Pratt. *Information measure based skeletonisation*. In J. Moody, S. Hanson and R. Lippmann, editors, Advances in Neural Information Processing Systems 4. Morgan Kaufmann, San Mateo, CA, 1992. Pages 1084-1087. See citing documents online at <http://citeseer.nj.nec.com/context/414800/0>.
- Lorien Y. Pratt, Jack Mostow, and Candace A. Kamm. *Direct Transfer of Learned Information among Neural Networks*, 1991. Proceedings of the Ninth National Conference on Artificial Intelligence (AAAI-91). Pages 584-589, Anaheim, CA, July 1991. AAAI. <http://citeseer.nj.nec.com/pratt91direct.html>
- Lorien Y. Pratt and Candace A. Kamm. *Improving a phoneme classification neural network through problem decomposition*. In Proceedings of the International Joint Conference on Neural Networks (IJCNN-91), pages 821-826, Seattle, WA, July 1991. IEEE. <http://citeseer.nj.nec.com/pratt91improving.html>
- Lorien Y. Pratt, Kathleen D. Cebulka, and Peter A. Clitherow. *Residual Speech Signal Compression: An Experiment in the Practical Application of Neural Network Technology*. In Proceedings of the Third International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems, IEA/AIE '90. Association for Computing Machinery, July 1990. Pages 1068-1072, Charleston, SC, July 1990. ACM. <http://portal.acm.org/citation.cfm?id=99124&coll=portal&dl=ACM&CFID=498829&CFTOKEN=85017696#>
- Stephen José Hanson and Lorien Y. Pratt. *Comparing biases for minimal network construction with back-propagation*. In D. S. Touretzky, editor, Advances in Neural Information Processing Systems 1, pages 177-185. Morgan Kaufmann, San Mateo, CA, 1989. Widely cited, see some citations at this site: <http://citeseer.nj.nec.com/context/6886/0>.

Non-Refereed Academic Publications

- Lorien Pratt, Manavendra Misra: *Perspectives On Academic Vs. Industry Environments For Women In Computer Science*. *ACM SIGCSE Bulletin 34 (2) June 2002*. Invited article.
- Lorien Y. Pratt. *Non-literal transfer Among Neural Network Learners*. Book chapter in In R.J. Mammone, editor, Artificial Neural Networks for Speech and Vision, Chapman & Hall, 1993.
- Lorien Y. Pratt. *Experiments on the transfer of knowledge between neural networks*. In S. Hanson, G. Drastal, and R. Rivest, editors, Computational Learning Theory and Natural Learning Systems, Constraints and Prospects, chapter 4.1. Morgan Kaufmann, 1993. See citations online at <http://citeseer.nj.nec.com/context/6886/0>.
- L. Y. Pratt *Non-literal transfer of information between neural network learners*. Technical Report MCS-92-04, Colorado School of Mines, Department of Mathematical and Computer Sciences, October 1992.

- Lorien Y. Pratt and C. A. Kamm. *Improving a Phoneme Classification Neural Network through Modular Decomposition*. Technical Report (Internal), Bellcore, September 1990.
- Lorien Y. Pratt. *The Potential for the Technology Transfer of Neural Network Techniques to Bellcore Applications*. Technical Report (Internal), Bellcore, July 1989.
- Lorien Y. Pratt and H. J. Sussmann. *Two algorithms for the Boltzmann machine: description, implementation, and a comparative empirical study of performance*. Technical Report SYCON-88-01, Rutgers Center for Systems and Control, 1988.

Invited Academic Talks

- *Neural networks for Hazardous Waste Remediation*. AAI workshop on AI and the Environment. Seattle, WA.7/1994.
- *Transfer Between Neural Networks, With An Application To Hazardous Waste Remediation*, University of Colorado, Boulder, Computer Science Colloquium.10/27/94.
- *Transfer between neural network learners, as applied to hazardous waste remediation*, Colorado University, Denver, 10/5/94.
- *Applying New Results in Neural Network Research to Dig Face Characterization*. Idaho National Engineering Laboratories.7/27/94.
- *Computational approaches to hazardous waste problems* (with Richard Hansen and Jean Bell) Rocky Flats National Laboratory.3/18/94.
- *Transferring neural network technology to applications settings*. College of Business, Denver University, 1/19/94
- *Transferring Information among Neural Networks*, Computer Science Department, Exeter University, England.6/30/93.

HONORS AND AWARDS

- NSF CAREER award, 1995 (see GRANTS, above)
- Exemplary Research award for "Development of an Intelligent Forensic System for Hair-Analysis and Comparison". Colorado Advanced Software Institute, 1995.
- Best Paper award for the symposium: Artificial Neural Networks and Adaptive Systems in the Twelfth European Meeting on Cybernetics and Systems Research. Vienna, April 1994.
- Profiled in IEEE Expert, the Mining Company, ThinkMobile, the Google Directory of Artificial Intelligence People, think.com, search.com, answers.com, the Open Directory Project of Artificial Intelligence People

PhD Thesis

L. Y. Pratt. *Transferring Previously Learned Back-Propagation Neural Networks to New Learning Tasks*. PhD thesis, Rutgers University, Department of Computer Science, New Brunswick, NJ 08904, May 1993. <http://citeseer.nj.nec.com/pratt93transferring.html> .

GRANTS

- 1995 Development of Techniques for Neural Network Transfer, as Applied to Hazardous Waste Characterization. NSF CAREER award. See <http://www.best.com/~worktree/f/71/026f.htm>.
- 1993-1994 With C. Ganesh, received the Colorado Advanced Software Institute (CASI) technology transfer grant for the application of a neural network to the task of forensic hair analysis and comparison. This project also explores methods for extracting explanations from neural networks. 1993-1994.
- With M. Misra and R. Hansen, received a grant from the Idaho National Engineering Laboratories to explore wavelet preprocessing and interpolation techniques for input to neural networks for hazardous waste sensor interpretation. 1994-1995.
- With J. Jones, received a subcontract from MTS systems, Inc., to study the use of neural networks for interpretation of wireless microsensors in advanced materials. 1995-1996.

- As a graduate student at Rutgers University, received a student support award to study Learning and Neural Networks. Grant from Siemens, Inc. 1990.

ACADEMIC WORKSHOP AND CONFERENCE ORGANIZATION

- Co-Chair: *Learning to learn: knowledge consolidation and transfer in inductive systems*, 1995. Workshop held at NIPS (Neural Information Processing Systems)-95, Vail, CO
- Program committee, NIPS 1995
- Program committee: IEEE Conference on Applications of Artificial Intelligence, 1995
- Program committee and session chair: International Conference on Machine Learning, 1994
- Local Arrangements Chair, NIPS 1994
- Organized the Spring 1995 *Colorado Neural Network colloquium series* at the Colorado School of Mines.
- Organized the Spring 1993 *Colorado Machine Learning colloquium series* at the Colorado School of Mines.
- Organized workshop on *Comparisons between Neural Networks and Decision Tree Induction Techniques* in conjunction with Neural Information Processing (NIPS), 1990.
- Organized the Fall, 1988 *Neural Networks colloquium series at Rutgers*.

ACADEMIC AND TEACHING EXPERIENCE

- 1996-2002. **Telecom 101** (at **Evolving Systems**). Created, designed, and taught regularly.
- 1992-1996. Assistant Professor, **Department of Mathematical and Computer Sciences, Colorado School of Mines**. Courses taught:
 - Neural Networks (graduate course)
 - Introductory Artificial Intelligence (combined graduate/undergraduate)
 - Machine Learning (graduate course)
 - Programming Concepts and Data Structures (undergraduate course)
- 1986-1992. Graduate research and teaching assistant (part time), **Rutgers University, Department of Computer Science**.
 - Neural network assistance with **Human Genome Project**.
 - Teaching assistant for Machine Learning, Introduction to Artificial Intelligence, Discrete Structures in Computer Science, Introduction to Computer Science. 1988.
 - Adjunct faculty teaching assistant (part time). Princeton University, Department of Psychology.

INDUSTRY EXPERIENCE

2008-PRESENT: QUANTELLIA, LLC

CTO and Cofounder of Quantellia, LLC a software and consulting company delivering Decision Engineering software and services. <http://www.quantellia.com> .

2004-2007 STRATECAST: A DIVISION OF FROST AND SULLIVAN

Global Director, Stratecast OSS and Infrastructure. Directed world's largest telecom OSS market research group through 400% growth period, adding significant consulting component to the practice. Authored reports, directed and conducted consulting projects (as above), Managed OSS team (including significant strategic planning and report review responsibilities), later promoted to managing two other practices in addition to OSS.

2002 – 2004: LORIEN PRATT, LLC

Roles:

- **Senior Market Analyst** on contract with TRI. Interviews, writing, customer consulting projects, sales, web design, marketing, newsletter.
- **Telecommunications Consulting with TRI**
- **Analytics Consultant,**

MAY – SEPTEMBER 2003: ANSWERON, INC. – LONGMONT, CO.

Vice President of Business Development and Chief Scientist for startup company offering predictive analytics solutions to the telecom and financial services industry. Part time. May-September 2003

MAY 1996 – 2002: EVOLVING SYSTEMS, INC. – ENGLEWOOD, CO

Roles:

- **Director of Market Research** Created market research function.
- **Project Manager, CTPE/Call Agent**
- **Corporate Competitive Analyst**
- **Product Champion, Accounting Server**
- **Team Lead and Assistant Software Architect, MetOSS-GEM**
- **Technical lead, Practices and Standards Group**
- **Team lead, software engineering and third party / reusable software, catalyst group.**

1989, 1990: BELLCORE, SPEECH TECHNOLOGY RESEARCH / COMPUTER TECHNOLOGY TRANSFER

Speaker identity verification, neural networks in telecommunications

1984-1986: IBM. ASSOCIATE PROGRAMMER, MVS DEVELOPMENT.

Team lead in charge of new functionality and maintenance, System Resources Manager (SRM) component of the MVS operating system.

1983-1984: BAKER LIBRARY. STAFF PROGRAMMER

Designed and coded the Dartmouth College Online Catalog, an automated reference search program. User interface design and coding, UNIX system administration.

See my LinkedIn profile for recommendations and additional information:

<http://www.linkedin.com/pub/0/92/7b8> .