Chang-Tien Lu

A. Education/Training

Georgina Institute of Technology	Computer Science	M.S.	1996
University of Minnesota, Twin Cities	Computer Science	Ph.D.	2001

B. Positions and Honors

Positions and Employment

2002-2008	Assistant Professor of Computer Science, Virginia Tech, VA
2008-present	Associate Professor of Computer Science, Virginia Tech, VA

Other Experience and Professional Memberships

2006	Program Co-Chair, IEEE International Conference on Tools with Artificial Intelligence
2008-2011	Secretary, ACM Special Interest Group on Spatial Information
2008	Guest Editor, International Journal on Artificial Intelligence Tools
2008	General Co-Chair, IEEE International Conference on Tools with Artificial Intelligence
2009	Guest Editor, GeoInformatica: An International Journal on Advances of Computer Science for Geographic Information Systems
2009	General Co-Chair, ACM International Conf. on Advances in Geographic Information Systems
2011-2014	Vice Chair, ACM Special Interest Group on Spatial Information
2011-2014	Executive Committee member, ACM Special Interest Group on Spatial Information

Honors

2006	Outstanding Service Award, ACM Conference on Information and Knowledge Management
2009	Leadership and Service Award, ACM SIGSPATIAL International Conf. on Advances in GIS
2009	Outstanding Service Award, ACM Conference on Information and Knowledge Management

C. Selected Peer-reviewed Publications (from 82 peer-reviewed publications)

(a) Journal

- X. Liu, F. Chen, C.T. Lu, "On Detecting Spatial Categorical Outliers," *GeoInformatica, An International Journal on Advances of Computer Science for Geographic Information System*, Springer. (Published online: 28 September 2013)
- A. Boedihardjo, C.T. Lu, F. Chen, "Fast Adaptive Kernel Density Estimator for Data Streams," *Knowledge and Information Systems An International Journal (KAIS)*, Springer (Published online: Dec. 12, 2013)
- Qi Li, C.T. Lu, "A Two-layer Framework for Appearance based Recognition using Spatial and Discriminant Influences," *Neurocomputing*, Elsevier, Volume 119, pp. 425-433, Nov. 7, 2013.
- C.T. Lu, R. F. DosSantos, X. Liu, Y. Kou,"A Graph-based Approach to Detect Abnormal Spatial Points and Regions," *International Journal on Artificial Intelligence Tools*, Volume 20, No. 4, pp. 721-751, August 2011.
- C.T. Lu, J. Dai, Y. Jin, J. Mathuria, "GLIP: A Concurrency Control Protocol for Clipping Indexing," *IEEE Transactions on Knowledge and Data Engineering*, Volume 21, No. 5, pp. 714-728, May 2009.
- D. Chang, C.T. Lu, Y. Kou, F. Chen, "On Detecting Spatial Outliers," *GeoInformatica, An International Journal on Advances of Computer Science for Geographic Information System*, Springer, Volume 12, Issue 4, pp. 455- 475, December 2008.
- C. Steel, C.T. Lu, "Impersonator Identification through Dynamic Fingerprinting," *Digital Investigation, the International Journal of Digital Forensics & Incident Response*, Elsevier, Volume 5, Issues 1-2, pp. 60-70, September 2008.

- C.T. Lu, Y. Kou, J. Zhao, L. Chen, "Detecting and Tracking Region Outliers in Meteorological Data," *Information Sciences Journal, Informatics and Computer Science Intelligent Systems Applications, An International Journal*, Elsevier, Volume 177, Issue 7, pp. 1609-1632, April, 2007.
- C.T. Lu, R. F. Dos Santos, L. Sripada, Y. Kou, "Advances of GML for Geospatial Applications," *GeoInformatica: An International Journal on Advances of Computer Science for Geographic Information System*, Volume 11, Number 1, pp. 131-157, March 2007.
- C.T. Lu, L. Sripada, S. Shekhar, R. Liu, "Transportation Data Visualization and Mining for Emergency Management," *International Journal of Critical Infrastructures*, Vol.1, Nos. 2/3, pp. 170-194, 2005.
- S. Shekhar, C.T. Lu, P. Zhang, "A Unified Approach to Spatial Outliers Detection," *GeoInformatica, An International Journal on Advances of Computer Science for Geographic Information System*, Vol. 7, No.2, pp. 139-166, Springer, June 2003.

(b) Conference
- T. Hua, F. Chen, L. Zhao, C.T. Lu, N. Ramakrishnan, "STED: Semi-Supervised Targeted-Interest Event Detection in Twitter," *Proceedings of the 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, pp. 1466-1469, August, 11-14, 2013.
- A. Elbery, M. Elnainay, F. Chen, C.T. Lu, J. Kendall, "A Carpooling Recommendation System Based on Social VANET and Geo-social Data," *Proceedings of the 21st ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, pp. 546-549, Orlando, Florida, Nov. 5-8, 2013.
- D. Grosvenor, J. Kendall, A. Sanders, C.T. Lu, "Kongress: A Search and Data Mining Application for U.S. Congressional Voting and Twitter Data," *Proceedings of the 21st ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, pp. 550-553, Orlando, Florida, Nov. 5-8, 2013.
- H. Dong, B. Wang, C.T. Lu, "Deep Sparse Coding based Recursive Disaggregation Model for Water Conservation," *Proceedings of the 23rd International Joint Conference on Artificial Intelligence (IJCAI)*, pp. 2804-2810, Beijing, China, Aug. 3-9, 2013.
- Y. Lu, F. Chen, Y. Chen, C.T. Lu, "A Generalized Student-t based Approach to Mixed-Type Anomaly Detection," *Proceedings of the Twenty-Seventh AAAI Conference on Artificial Intelligence (AAAI13)*, pp. 633-639, Bellevue, WA, July 16-18, 2013.
- Q. Yan, M. Li, F. Chen, T. Jiang, W. Lou, Y.T. Hou, C.T. Lu, "'Optimal Network Traffic Surveillance in Cognitive Radio Networks," *Proceedings of the 32th IEEE International Conference on Computer Communications (IEEE INFOCOM 2013)*, pp. 1264-1272, Turin, Italy, April 14-19, 2013.
- B. Wang, H. Dong, A. Boedihardjo, F. Chen, C.T. Lu, "A Hierarchical Probabilistic Model for Low Sample Rate Energy Disaggregation," *Proceedings of the 2013 SIAM International Conference on Data Mining (SDM13)*, pp. 704-712, Austin, TX, May 2-4, 2013.
- X. Liu, F. Chen, C.T. Lu, "Robust Prediction and Outlier Detection for Spatial Datasets," *Proceedings of the 12th IEEE International Conference on Data Mining (IEEE ICDM)*, pp. 469-478, Brussels, Belgium, Dec. 10-13, 2012.
- B. Wang, F. Chen, H. Dong, A. Boedihardjo, C.T. Lu, "Signal Disaggregation via Sparse Coding with Featured Discriminative Dictionary," *Proceedings of the 12th IEEE International Conference on Data Mining (IEEE ICDM)*, pp. 1134-1139, Brussels, Belgium, Dec. 10-13, 2012.
- B. Wang, H. Dong, A. Boedihardjo, C.T. Lu, H. Yu, I.R. Chen, J. Dai, "An Integrated Framework for Spatial-Temporal Textual Search and Mining," *Proceedings of the 19th ACM*

SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2011), pp. 570-573, Redondo Beach, CA, Nov. 6-9, 2012.

- Y.J. Wu, F. Chen, C.T. Lu, B. Smith, Y. Chen, "Traffic Flow Prediction for Urban Network Using Spatiotemporal Random Effects Model," *Transportation Research Board (TRB) 91st Annual Meeting*, Paper: 12-4179, Washington DC, January 22-26, 2012.
- S. Shah, F. Bao, C.T. Lu, I.R. Chen, "CROWDSAFE: Crowd Sourcing of Crime Incidents and Safe Routing on Mobile Devices," *Proceedings of the 19th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2011)*, pp. 521-524, Chicago, Illinois, Nov. 1-4, 2011.
- X. Liu, F. Chen, C.T. Lu, "Spatial Categorical Outlier Detection: Pair Correlation Function Based Approach," *Proceedings of the 19th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2011)*, pp. 465-468, Chicago, Illinois, Nov. 1-4, 2011.
- F. Chen, J. Dai, B. Wang, S. Sahu, M. Naphade, C.T. Lu, "Activity Analysis Based on Low Sample Rate Smart Meters," *Proceedings of the 17th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (ACM KDD 2011)*, pp. 240-248, San Diego, CA, Aug. 21-24, 2011.
- J. Dai, C.T. Lu, "DIME: Disposable Index for Moving Objects," *Proceedings of the 12th IEEE International Conference on Mobile Data Management*," pp. 68-77, Lulea, Sweden, June 6-9, 2011.
- X. Liu, C. Jian, C.T. Lu, "Demo Paper: A Spatio-Temporal Crime Search Engine," *Proceedings of the 18th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2010)*, pp. 528-529, San Jose, California, Nov. 2-5, 2010.
- X. Liu, C.T. Lu, F. Chen, "Spatial Outlier Detection: Random Walk Based Approaches," *Proceedings of the 18th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2010)*, pp. 370-379, San Jose, California, Nov. 2-5, 2010.
- F. Chen, C.T. Lu, A. Boedihardjo, "GLS-SOD: A Generalized Local Statistical Approach for Spatial Outlier Detection," *Proceedings of the 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (ACM KDD 2010)*, pp. 1069-1078, Washington DC, July 25-28, 2010.
- J. Dai, C.T. Lu, "C3: Concurrency Control on Continuous Queries over Moving Objects," *Proceedings of the 26th IEEE International Conference on Data Engineering (ICDE-2010)*, pp. 121-132, Long Beach, California, March 1-6, 2010.
- J. Dai, C.T. Lu, L.F. Lai, "A Concurrency Control Protocol for Continuously Monitoring Moving Objects," Proceedings of the 10th International Conference on Mobile Data Management: Systems, Services and Middleware (MDM 2009), pp. 132-141, Taipei, Taiwan, May 18-20, 2009.
- F. Chen, C.T. Lu, A. Boedihardjo, "On Locally Linear Classification by Pairwise Coupling," *Proceedings of the 8th IEEE International Conference on Data Mining*, pp. 749-754, Pisa, Italy, Dec. 15-19, 2008.
- C.T. Lu, A. Boedihardjo, J. Dai, F. Chen, "HOMES: Highway Operations Monitoring and Evaluation System," *Proceedings of the 16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, pp. 529-530, Irvine, CA, Nov. 5-7, 2008.
- J. Dai, C.T. Lu, "CLAM: Concurrent Location Management for Moving Objects," *Proceedings of the 15th ACM International Symposium on Advances in Geographic Information Systems (ACM GIS2007)*, Seattle, Washington, Article No. 38, Nov. 7-9, 2007.