Charalampos Chelmis

Contact Information

University at Albany – SUNY
College of Engineering and Applied Sciences
Computer Science Department
1215 Western Ave., UAB–424B
Albany, NY 12222

Work: 518-437-4948
Mobile: 213-377-4554
E-mail: cchelmis@albany.edu
Webpage: http://wwwcs.albany.edu/∼cchelmis/

Research Interests

Scalable mining of static and time-evolving massive graphs, dynamic processes in large-scale networks, Big Data analytics, networked interactions in cyber-physical systems, applied machine learning

Education

Ph.D. in Computer Science **2013**
Department of Computer Science, University of Southern California, Los Angeles, CA
Thesis: Heterogeneous Graphs Versus Multimodal Content: Modeling, Mining, and Analysis of Social Network Data

M.S. in Computer Science **2010**
Department of Computer Science, University of Southern California, Los Angeles, CA

B.Eng. in Computer Engineering and Informatics **2007**
Computer Engineering & Informatics Department, University of Patras, Patras, Greece
Topic: Peer-to-peer networks, distributed collaboration systems

Appointments

University at Albany – SUNY, Computer Science Department
Assistant Professor **September 2016–present**
Director of the UAlbany Intelligent Big Data Analytics, Applications, and Systems (IDIAS) Lab
Lead the research efforts for developing models, algorithms, and systems that leverage Big Data to understand social behavior and make accurate predictions in application domains including but not limited to Online Social Networks, Internet of Things, and Cyber-Physical Systems

University of Southern California, Ming Hsieh Department of Electrical Engineering
Senior Research Associate **July 2015–August 2016**
Lead the research efforts for (i) designing and developing optimized algorithms for mining massive time-evolving real-world graphs, (ii) accelerating Big Graph analytics on parallel and heterogeneous architectures, and Cloud-Infrastructure, (iii) developing of networked data mining and machine learning algorithms to extract patterns and enable accurate predictions in graphs with minimal computational complexity, and (iv) addressing complex integration issues that arise from the need for analysis of large-scale heterogeneous datasets in real-world scenarios.

University of Southern California, Ming Hsieh Department of Electrical Engineering
Research Associate **January 2014–June 2015**
Designed and developed efficient methods for (i) automating semantic querying in data lakes, and (ii) addressing veracity aspects as well as performing scalable and adaptive time-series forecasting in the emerging Big Data application domain of Smart grids.

University of Southern California, Computer Science Department
Research Assistant **2010–2013**
Developed a novel formal model of complex, heterogeneous networks that lead to significant performance improvements in a variety of prediction and recommendation tasks in online social networks.

Chevron Information Technology Company **Summer 2010**
Research Intern
Developed a complex integrated system that enabled mediation between various proprietary tools using domain knowledge.

Awards Fellowships Scholarships

Methodology Prize Award, DARPA Forecasting Chikungunya Challenge (with Ajitesh Srivastava and Anand Panangadan) **May 2015**
First Prize Award (Student Project), 2nd ESWC Summer School **2012**
Honorable Mention (SpringerTabs), Springer API Challenge 1.0 **2011**
Academic Achievement Award, USC Office of International Services **2009–2010**
Andreas Mentzelopoulos Scholarship **2008–2010**

Press Coverage

UAlbany News, National Science Foundation Awards Three UAlbany Faculty $1 Million Grant **December 2017**
USC News, USC engineers earn national recognition for forecasting outbreaks **June 2015**
USC Viterbi News, GOING VIRAL–USC team recognized for predicting disease outbreaks **June 2015**

Grants (Co-PI)

SCC-IRG Track 2: Community on Multimodality: Participatory Action, Service, and Support, 09/01/17 - 08/31/20, SCC-1737443, $996,740. The project focuses on maximizing the efficiency of delivering human and physical service by integrating people and data with analytics, engineering, and social and behavioral sciences.

CNS: CSR: Small: Exploiting 3D Memory for Energy-Efficient Memory-Driven Computing, 10/01/16 - 09/30/19, CNS-1643351, $497,764. The project focuses on parallel algorithms and application-specific architectures for energy-efficient data intensive applications on 3D integrated circuits.

Teaching Experience

Instructor
ICSI 432/532: Network Science, University at Albany **Spring 2017, Spring 2018**
ICSI 402: Systems Programming, University at Albany **Fall 2016, Fall 2017**
Guest Lecturer
Influence in Social Networks: Analytical and Computational Challenges **Fall 2014**
EE599, Special Topics in Social Network Systems, University of Southern California
Computational Models of Technology Adoption at the Workplace **Spring 2013**
EE598, Electrical Engineering Research Seminar, University of Southern California
Teaching Assistant
CSCI 571: Web Technologies, University of Southern California **Spring 2009, Fall 2009**
CSCI 101: Fundamentals of Computer Programming, University of Southern California **Fall 2008**
Distributed Systems I, University of Patras **Fall 2007**
Software Laboratory, University of Patras **Fall 2006, Fall 2007**

Students Advised

Balaji Sankeerth Jagini, M.S. student, UAlbany
Angeliki Kapodistria, Ph.D. student, UAlbany
Muhammad Rizwan Saeed, senior Ph.D. student, USC
Ajitesh Srivastava, senior Ph.D. student, USC
Mengfan Yao, Ph.D. student, UAlbany

Alumni

Suchindra Agarwal, M.S., USC (currently at Amazon)
Saima Aman, Ph.D 2016, USC (Prediction Models for Dynamic Decision Making in Smart Grid)
Reshul Dani, senior undergraduate student, Pune, Maharashtra, India
Andrew Furgiuele, senior undergraduate student, UAlbany
Zachary T. Gima, B.S. 2013, USC (currently Ph.D. student at UC Berkeley)
Jahanvi Kolte, senior undergraduate intern (Nirma University)
Sanmukh Rao Kuppannagari, senior Ph.D. student, USC
Muhammad Usman Noor, M.S. 2013, USC (currently at Sapphire Textile Mills, Ltd)
Ranjan Pal, Ph.D. 2014, USC (currently Research Scientist at USC)
Ketan Singh, M.S. 2013, USC (currently at Apple)
Charith Wickramaarachchi, USC (currently at Google)
Hao Wu, Ph.D. student, USC (currently at ISI)
Jiabin Zhang, M.S. 2016, (currently at Snapchat Inc.)
Shijie Zhou, senior Ph.D. student, USC
Vasileios Zois, M.S. 2015, USC (currently Ph.D. student at UCRiverside)

Academic Service

Co-Editor
Encyclopedia of Social Network Analysis and Mining, Springer **2016**
Guest Editor
Journal of Parallel and Distributed Computing – Special Issue: Scalable Computing Systems for Big Data Applications **2015**
Co-Chair
IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (PhD Forum and Posters Track) **2015–2017**

Int'l Workshop on Scalable Computing For Real-Time Big Data Applications	**2014–2017**
IEEE Parallel Learning Workshop	**2016**
Program Committee	
IEEE International World Wide Web Conference (WWW) – Posters Track	**2015–2016**
International AAAI Conference on Web and Social Media	**2017–present**
IEEE International Conference on Social Computing	**2012–2016**
IEEE International Conference on High Performance Computing	**2015–present**
IEEE International Conference on Advances in P2P Systems	**2010–2012**
Reviewer	
PLOS One	**2016–present**
IEEE Transactions on Knowledge and Data Engineering	**2015–present**
IEEE Transactions on Computational Social Systems	**2015–present**
IEEE Transactions on Information Forensics & Security	**2016–present**
IEEE Transactions on Internet Technology	**2016–present**
ASE International Conference on Social Informatics	**2012**
IEEE International Conference on Social Computing	**2011**
NSF Service	
NSF Review Panelist for CISE	**2017**

Selected Journal Publications

[1] A. Srivastava, **C. Chelmis**, V. K. Prasanna, "Computing Competing Cascades on Signed Networks", *Social Network Analysis and Mining*, 6(1): 82, 2016

[2] A. Srivastava, **C. Chelmis**, V. K. Prasanna, "The unified model of social influence and its application in influence maximization", *Social Network Analysis and Mining*, 5(1): 1-12, 2015

[3] **C. Chelmis**, A. Srivastava, V. K. Prasanna, "Computational Models of Technology Adoption at the Workplace", *Social Network Analysis and Mining*, 4(1): 1-18, 2014

[4] **C. Chelmis**, V. K. Prasanna, "Social Link Prediction in Online Social Tagging Systems", *ACM Transactions on Information Systems*, 31(4), 2013

[5] **C. Chelmis**, V. K. Prasanna, "An Empirical Analysis of Microblogging Behavior in the Enterprise", *Social Network Analysis and Mining*, 3(3): 611-633, 2013 (Invited)

***** Four (4) published journal articles are not included in this list.**

Selected Conference Publications

[6] D.-S. Zois, A. Kapodistria, M. Yao, **C. Chelmis**, "Optimal Online Cyberbullying Detection", *The IEEE International Conference on Acoustics, Speech, and Signal Processing*, 2018

[7] **C. Chelmis**, D.-S. Zois, M. Yao, "Mining Patterns of Cyberbullying on Twitter", *The Seventh IEEE ICDM Workshop on Data Mining in Networks*, 2017

[8] **C. Chelmis**, R. Dani, "ASSIST: Automatic Summarization of Significant Structural Changes in Large Temporal Graphs", *Web Science Conference*, 2017

[9] **C. Chelmis**, R. Dani, "Temporal Graph Anomaly Summarization", International School and Conference on Network Science, 2017

[10] A. Srivastava, **C. Chelmis**, V. K. Prasanna, "Mining Large Dense Subgraphs", *5th International World Wide Web Conference*, 2016

[11] M. R. Saeed, **C. Chelmis**, V. K. Prasanna, "ASQFor: Automatic SPARQL Query Formulation for the Non-Expert", *25th International Joint Conference on Artificial Intelligence*, 2016 (Demo)

[12] S. Aman, **C. Chelmis**, V. K. Prasanna, "Learning to REDUCE: A Reduced Electricity Consumption Prediction Ensemble", *AAAI Conference on Artificial Intelligence Workshop on Artificial Intelligence for Smart Grids and Smart Buildings*, 2016

[13] A. Srivastava, **C. Chelmis**, V. K. Prasanna, "Social Influence Computation and Maximization in Signed Networks with Competing Cascades", *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 2015 (Acceptance Rate $< 18\%$)

[14] S. Aman,**C. Chelmis**, V. K. Prasanna, "Influence-driven Model for Time Series Prediction from Partial Observations", *AAAI Conference on Artificial Intelligence*, 2015 (Acceptance Rate $< 20\%$)

[15] **C. Chelmis**, S. Aman, M. R. Saeed, M. Frincu, V. K. Prasanna, "Estimating Reduced Consumption for Dynamic Demand Response", *AAAI Conference on Artificial Intelligence Workshops*, 2015

[16] **C. Chelmis**, J. Kolte, V. K. Prasanna, "Big Data Analytics for Demand Response: Clustering Over Space and Time", *IEEE International Conference on Big Data Workshops*, 2015

[17] C. Wickramaarachchi, A. Kumbhare, M. Frincu, **C. Chelmis**, V. K Prasanna, "Real-time Analytics for Fast Evolving Social Graphs", *15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing*, 2015

[18] C. D. Wickramaarachchi, **C. Chelmis**, V. K. Prasanna, "Empowering Fast Incremental Computation over Large Scale Dynamic Graph", *International Workshop on Parallel & Distributed Computing for Large Scale Machine Learning & Big Data Analytics*, 2015

[19] A. Srivastava, R. Chen, **C. Chelmis**, V. K. Prasanna, "A Hybrid Design for High Performance Large-scale Sorting on FPGA", *International Conference on Reconfigurable Computing and FPGAs*, 2015

[20] S. Zhou, **C. Chelmis**, V. K. Prasanna, "Optimizing Memory Performance for FPGA Implementation of PageRank", *International Conference on Reconfigurable Computing and FPGAs*, 2015

[21] S. Zhou, **C. Chelmis**,V. K. Prasanna, "Accelerating Large-Scale Single-Source Shortest Path on FPGA", *IEEE International Parallel and Distributed Processing Symposium Workshop*, 2015

[22] **C. Chelmis**, M. R. Saeed, M. Frincu, V. K. Prasanna, "Curtailment Estimation Methods for Demand Response: Lessons learned by comparing apples to oranges", *ACM International Conference on Future Energy Systems*, 2015 (Acceptance Rate $< 23\%$)

[23] R. Pal, **C. Chelmis**, S. Aman, C. Tadepalli, M. Frincu, V. K. Prasanna, "Online Time Series Clustering For Demand Response: A Theory to Break the Curse of Dimensionality", *ACM International Conference on Future Energy Systems*, 2015 (Acceptance Rate $< 23\%$)

[24] M. Frincu, **C. Chelmis**, S. Aman, M. R. Saeed, V. Zois, V. K. Prasanna, "Enabling Automated Dynamic Demand Response: From Theory to Practice", ACM International Conference on Future Energy Systems, 2015 (Acceptance Rate $< 23\%$)

[25] A. Srivastava, **C. Chelmis**, V. K. Prasanna, "Influence in Social Networks: A Unified Model?", *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 2014 (Acceptance Rate $< 18\%$)

[26] M. Frincu, **C. Chelmis**, M. U. Noor, V. K. Prasanna, "Accurate and Efficient Selection of the Best Consumption Prediction Method in Smart Grids", *IEEE International Conference on Big Data*, 2014 (Acceptance Rate $< 19\%$)

[27] **C. Chelmis**, V. K. Prasanna, "The Role of Organization Hierarchy in Technology Adoption at the Workplace", *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 2013 (Acceptance Rate $< 13\%$)

[28] H. Wu, **C. Chelmis**, Y. Zhang, V. Sorathia, O. Patri, V. K. Prasanna, "Enriching Employee Ontology for Enterprises with Knowledge Discovery from Social Networks", *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 2013

[29] **C. Chelmis**, "Complex Modeling and Analysis of Workplace Collaboration Data", *International Conference on Collaboration Technologies and Systems*, 2013

[30] **C. Chelmis**, V. K. Prasanna, "Exploring Generative Models of Tripartite Graphs for Recommendation in Social Media", *4rth International Workshop on Modeling Social Media*, 2013

[31] **C. Chelmis**, V. K. Prasanna, "Predicting Communication Intention in Social Networks", *ASE/IEEE International Conference on Social Computing*, 2012 (Acceptance Rate $< 10\%$)

[32] **C. Chelmis**, V. K. Prasanna, "Microblogging in the Enterprise: A few comments are in order", *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 2012 (Acceptance Rate $< 16\%$)

[33] **C. Chelmis**, V. Sorathia, V. K. Prasanna, "Enterprise Wisdom Captured Socially", *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 2012 (Invited Paper)

[34] **C. Chelmis**, V. K. Prasanna, "Social Networking Analysis: A State of the Art and the Effect of Semantics", *IEEE International Conference on Social Computing*, 2011

***** Eighteen (18) conference publications are not included in this list.**

BOOK CHAPTERS

[35] **C. Chelmis**, "Microblogging Behavior and Technology Adoption at the Workplace", *The Cambridge Handbook of Technology and Employee Behavior*, Cambridge University Press, 2018

[36] A. Srivastava, **C. Chelmis**, V. K. Prasanna, "Computational Models for Cascades in Massive Graphs: How to Spread a Rumor in Parallel", *Parallel Graph Algorithms*, Chapman & Hall/CRC Computational Science (Accepted)

[37] V. Zois, **C. Chelmis**, V. K. Prasanna, "Querying of Time Series for Big Data Analytics", *Handbook of Research on Innovative Database Query Processing Techniques*, IGI Global, 2015

[38] **C. Chelmis**, V. Sorathia, V. K. Prasanna, "Enterprise Knowledge Preservation and Management", *Collaborative Processes and Decision Making in Organizations*, IGI Global, 2013

TUTORIALS

[39] **C. Chelmis**, D.-S. Zois, "Characterization, Detection, and Mitigation of Cyberbullying", *12th International Conference on Web and Social Media*, 2018

[40] **C. Chelmis**, D.-S. Zois, "Popularity on the Web: From Estimation to Prediction", IEEE International Conference on Big Data, 2017

TALKS AND POSTERS

[41] **C. Chelmis**, "Addressing the Challenges of Big Networked Data", 2016-2017 Advanced Data Analytics Lightning Talks Series, *UAlbany Advanced Data Analytics Network*, Feb. 2017 (Invited Talk)

[42] S. Aman, **C. Chelmis**, V. K. Prasanna, "Addressing Data Veracity in Big Data Applications", *IEEE International Conference on Big Data*, 2014 (Poster)

[43] **C. Chelmis**, "Influence in Social Networks: Analytical and Computational Challenges", *Electrical Engineering 599: Special Topics in Social Network Systems*, 2014 (Invited Talk)

[44] **C. Chelmis**, "Predicting Communication Intention in (Enterprise) Social Networks", *Milibo*, 2013 (Webinar)

[45] **C. Chelmis**, "Computational Models of Technology Adoption at the Workplace", *Electrical Engineering Research Seminar*, 2013 (Invited Talk)

[46] **C. Chelmis**, V. K. Prasanna, "Exploring Generative Models of Tripartite Graphs for Recommendation in Social Media", *4rth International Workshop on Modeling Social Media*, 2013

[47] **C. Chelmis**, "Predicting Intention of Communication in Social Media", *University of Southern California, Department of Computer Science, Annual Research Review*, 2013 (Poster)

[48] **C. Chelmis**, "Enterprise Wisdom Captured Socially", *2nd European Semantic Web Conference (ESWC) Summer School*, 2012 (Poster)

[49] **C. Chelmis**, "Social Network as Knowledge Base", *University of Southern California, Department of Computer Science, Annual Research Review*, 2012 (Poster)

[50] K. Gomandam, **C. Chelmis**, "Social Space: A Novel Approach to Analyzing Social Networks by Bringing Data and Graphs Together", *Semantic Technology Conference*, 2010 (Poster)

PROFESSIONAL MEMBERSHIPS

Association for the Advancement of Artificial Intelligence (AAAI)	**2016–present**
Association of Computing Machinery (ACM)	**2008–present**
IEEE Computer Society	**2008–present**
IEEE Special Community for Big Data	**2013–present**
IEEE Special Community for Internet of Things	**2013–present**
IEEE Special Community for Knowledge and Data Engineering	**2013–present**
IEEE Power & Energy Society	**2013–present**
IEEE Special Community for Smart Grid Community	**2013–present**