

Kathy Macropol

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Research Interests

Data mining, bioinformatics, and machine learning, with a focus on the modeling and mining of large-scale, heterogeneous, and time-evolving graph and network data in biology, social networks, communication networks, and the Web.

Education

- 2007 – 2012** **Ph.D.** *University of California, Santa Barbara, CA.*
Ph.D. in Computer Science
- 2005 – 2007** **M.S.** *California State University, Channel Islands, CA.*
M.S. In Computer Science
- 1998 – 2000** **B.S.** *University of California, Los Angeles, CA.*
B.S. In Chemistry
Departmental Honors, College Honors, Cum Laude
- 1994 – 1998** **A.A.** *Ventura College, Ventura, CA.*
A.A. in Liberal Arts
Highest Honors

Teaching Experience

Assistant Professor **Fall 2012 – Present**

Arcadia University

- Courses taught include “Introduction to Data Mining,” “Advanced Data Mining,” “Research Writing in Computer Science,” “Database Management System Design,” “Data Structures and Algorithm Analysis,” “Problem-Solving with Algorithms / Programming I,” “Problem-Solving with Algorithms / Programming II,” and “Web Site Development”.
- Developed new courses and materials for “Intro to Data Mining,” “Advanced Data Mining,” and “Research Writing.”
- Supervised multiple student projects in Data Mining, resulting in applications ranging from facial recognition and OCR, to product recommendation and voice recognition.

Research Advisor for Undergraduate Students **Fall 2014 – Present**

Arcadia University

- Supervised Research / Capstone project for two undergraduate CS students. Research focused upon the collection, prediction (using Spike Neural Networks), and display of road traffic information.
- Supervised Research project for undergraduate CS student. Research focused upon the collection and analysis of conversation flow within Twitter messages.

Research Mentor for Intern**Summer 2010***University of California, Santa Barbara*

- Supervised and directed research program of community college student intern.
- Research focused upon the collection and data mining of time-varying graphs, culminating in a research poster for a small, campus-wide workshop session.

Teaching Assistant**Fall 2008***University of California, Santa Barbara*

- Teaching Assistant for CS 230, “Approximations, NP-Completeness and Algorithms” with Professor Teofilo Gonzalez, UCSB

Assistant Instructor**Spring 2006, Fall 2006***California State University, Channel Islands*

- Sole instructor for COMP 101, “Computer Literacy”, a 3 unit undergraduate course.
- Responsible for course design, teaching, and evaluation of students.

Publications

K Macropol, P Bogdanov, A.K. Singh, L Petzold, and X Yan. “I Act, Therefore I Judge: Network Sentiment Dynamics Based on User Activity Change.” In *Advances in Social Networks Analysis and Mining (ASONAM)*, pages 396-402, 2013. (acceptance rate: 28%)

K Macropol, and A.K. Singh. “Reachability Analysis and Modeling of Dynamic Event Networks.” In *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*, pages 442-457, 2012. (acceptance rate: 23%)

P Bogdanov, **K Macropol**, and AK Singh. “Function Annotation in Gene Networks.” In *Functional Coherence of Molecular Networks in Bioinformatics*, (Springer), ed. M Koyutürk, S Subramaniam, and A Grama (2012)

K Macropol. “Mining and Modeling of Large and Time-Evolving Graphs.” *Ph.D. Thesis*. University of California, Santa Barbara, (2012).

K Macropol and AK Singh. “Content-based Modeling and Prediction of Information Dissemination.” In *Advances in Social Networks Analysis and Mining (ASONAM)*, pages 21-22, 2011. (acceptance rate: 25%)

K Macropol and AK Singh. “Scalable Discovery of Best Clusters on Large Graphs.” In *Proceedings of the VLDB Endowment (PVLDB)*, pages 693-702, 2010 (acceptance rate: 16%)

K Macropol, T Can, and AK Singh. “RRW: repeated random walks on genome-scale protein networks for local cluster discovery.” In *BMC Bioinformatics*, 2009. (impact factor: 3.781)

K Macropol, C Fiorese, and M Venugopal. “MyDepressedSpace: Classification and Search on MySpace Pages.” In *Proceedings of the 3rd Graduate Student Workshop on Computing (GSWC)*, 2008. (acceptance rate: unknown)

K Macropol. “Genetic Programming and Decision Trees Applied to Medical Data Mining.” *M.S. Thesis.* California State University, Channel Islands, 2007.

Presentations

- 2014 “Modeling Opinion Change Within Online Social Networks,” Arcadia University Faculty Forum, Feb 2014
- 2013 “I Act, Therefore I Judge: Network Sentiment Dynamics Based on User Activity Change,” the 2012 International Conference on Advances in Social Network Analysis and Mining (ASONAM'13), Niagara Falls, Canada 2013
- “Clustering of Large, Biological Functional Networks,” Jiangsu University, June 2013 (Invited Presentation)
- 2012 “Reachability Analysis and Modeling of Dynamic Event Networks,” the 2012 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD'12), Bristol, UK 2012.
- 2011 “Content-based Modeling and Prediction of Information Dissemination,” the 2011 International Conference on Advances in Social Network Analysis and Mining (ASONAM'11), Kaohsiung, Taiwan 2011.
- 2010 “Scalable Discovery of Best Clusters on Large Graphs,” the 36th International Conference on Very Large Databases (PVLDB'10), Singapore 2010.
- 2008 “MyDepressedSpace: Classification and Search on MySpace Pages,” Proceedings of the 3rd Graduate Student Workshop on Computing (GSWC), Santa Barbara, CA, USA 2008.

Posters

K Macropol, and A.K. Singh. “Reachability Analysis and Modeling of Dynamic Event Networks.” In European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD) 2012

Funding

- 2014 “Request of a Server to Meet the Needs of the Computer Science Curriculum,” Arcadia University ITC Proposal, Co-author. \$4,726.69 – **Funded**
- 2013 “Use of Android Phones in Computer Science Curriculum,” Arcadia University ITC Proposal, Co-author. \$4,059.90 – **Funded**

Honors and Awards

2014	Math & CS Department Nominee for Arcadia University's Berger Prize
2013	Channel Magazine Spotlight Interview, Spring 2013
2007 – 2008	Distinguished Graduate Research Fellowship, University of California, Santa Barbara, CA
2000	Departmental Honors, College Honors, Cum Laude, <i>University of California</i> , Los Angeles, CA
1998	Wilson / Pepsi Scholar Athlete of the Year
1998	Scholar Athlete of the Year, Ventura College, CA
1998	Highest Honors, Ventura College, CA

Software Releases

2010	TopGC: Scalable graph clustering technique which probabilistically finds only the best clusters in large, edge-weighted, directed graphs.
2009	RRW: Graph clustering using repeated random walks to discover high quality, overlapping, clusters on weighted, undirected graphs.

Professional Activities

Program Committee Member

2013 DyNetMM

Reviewer

2014 BMC Bioinformatics, PLOS One, TKDE
2013 GRADES, BMC Bioinformatics, PLOS One, BIOINF, DyNetMM

External Reviewer

2012 ICDM, SNAKDD, KDD
2011 ICDE, VLDB, ICDM
2010 SIGMOD, PAKDD, ACM BCB, BIOKDD
2009 SDM, KDD, ICDM
2008 KDD, VLDB, ICDE

University Service

- IT Committee (2013–present)
- Faculty Search Committee member (2014 – present) for CS Assistant Professor
- Arcadia University team coach at ACM International Collegiate Programming Contest (2014)
- Faculty Search Committee member (2014) for successful Math Assistant Professor
- Co-Advisor for Arcadia University CS Club (2013–present)
- Co-Advisor for Arcadia University Programming Competition Team (2013-present)
- Advisor for first-year CS Students (2013–present)
- CS Department Webpage Redesign (2012--2014)