My central research interest is the principled measurement, analysis, and mining of large-scale complex social and communication networks. Networks are the natural framework of many of today’s highest impact computing applications: online social networking, Web search, product recommendations, mobile ad-hoc networking, and online dating are just a few examples. My past and current research efforts coalesce into my long-term goal of developing measurement tools and explanatory and predictive models that can measure, explain, forecast, and enhance networked systems where entities interact and evolve in complex ways.
Publications


Pinghui Wang, John C.S. Lui, Bruno Ribeiro, Don Towsley, Junzhou Zhao, Xiaohong Guan, “Efficiently Estimating Motif Statistics of Large Networks”, ACM Transactions on Knowledge Discovery from Data (TKDD), 2014.


Media Coverage: MIT Technology Review news from the arXiv.


Yeon-sup Lim, Bruno Ribeiro, Don Towsley, “Classifying Latent Infection States in Complex Networks”, SIMPLEX’14: Sixth Annual Workshop on Simplifying Complex Networks for Practitioners, 2014.


Weifeng Chen, Yong Huang, Bruno Ribeiro, Kyoungwon Suh, Honggang Zhang, Edmundo de Souza e Silva, Jim Kurose, and Don Towsley, “Exploiting the IPID field to infer network path and end-system characteristics”. PAM’05: Passive and Active Measurement Workshop, 2005.

Teaching

○ **Fall 2012:** Co-instructed “Statistics of Networks and Graphs” with Krista Gile & Don Towsley
  
  *Instructors:* Bruno Ribeiro, Krista Gile, and Don Towsley.
  *Prerequisites:* CS691SG & STAT691SG

○ **Fall 2011:** Co-instructed and developed “Introduction to Network Science”
  
  *Instructors:* Bruno Ribeiro and Don Towsley.
  *Prerequisites:* CS691NW
  *Institution:* UMass, Computer Science Department.
  
  This was the first time that a Network Science course was taught in the UMass Computer Science department.

Grants

○ **Role:** Co-PI & Technical Lead.
  *Source:* NSF Network Science (NetSE) Medium Grant
  *Project:* Modeling and Analysis of Network Dynamics
  *Institution:* UMass, CMU
  *Duration:* June. 2011 - May. 2015
  *Funding:* $780,235.

○ **Role:** Co-PI & Technical Lead.
  *Source:* ARO Network Science Collaborative Alliance
  *Project:* Extracting Network Knowledge: Exploring Large Graphs in a Dynamic and Uncertain World
  *Institutions:* CMU, UCR, UCSB, UNM, UMass
  *Website:* [http://www.ns-cta.org/ns-cta-blog/?page_id=916](http://www.ns-cta.org/ns-cta-blog/?page_id=916)
  *Funding:* $735,154.

○ **Role:** Co-PI & Technical Lead.
  *Source:* ARO Network Science Collaborative Alliance
  *Project:* Extracting Network Knowledge: Exploring Large Graphs in a Dynamic and Uncertain World
  *Institutions:* UMass, Raytheon BBN Technologies
  *Website:* [http://www.ns-cta.org/ns-cta-blog/?page_id=397](http://www.ns-cta.org/ns-cta-blog/?page_id=397)
  *Funding:* $109,770.

○ **Role:** External Member & Technical Lead.
  *Project:* THANES - THeory and Application of NEtwork Science
  *Institutions:* INRIA (France), UFRJ (Brazil), CMU (USA)
  *Duration:* March 2014 – March 2016
  *Website:* [https://team.inria.fr/thanes/](https://team.inria.fr/thanes/)
  *Funding (travel only):* $81,438 USD.

Honors and Awards

○ **IEEE NetSciCom’14 Best Paper Award**, 2014

○ **CAPES Scholarship** to pursue Ph.D., 2004–2008

○ **CNPq Scholarship** to pursue M.S., 2002–2003
Selected Press Coverage

- CNET: *Annoyed by Facebook? Sorry, it’s sticking around, study says*, Feb. 2014
- The Pittsburgh Post-Gazette: *Reports of Facebook’s imminent death have been exaggerated*, Feb. 2014.

Student Mentoring

- Fabricio Murai, 4th year Ph.D. Candidate (UMass).
- Minh Hoang, 3rd year Ph.D. Candidate, (UC Santa Barbara).
- Kun Tu, 5th year Ph.D. Candidate (UMass).
- James Atwood, 3rd year Ph.D. Candidate, (UMass).
- Ting-Kai Huang (on one thesis chapter), Ph.D. (UC Riverside) now at Google.

Panels


Keynotes

Talks

- *Online Myopic Network Covering*, Boston University, Mar., 2013.
- *Characterizing Continuous Time Random Walks on Time Varying Graphs*. MoBS, Department of Physics, Northeastern University, Apr, 2012. (invited)
- *Understanding Complex Networks through Incomplete Information: Mistakes, Myths, and Positive Steps. Invited Speaker*. Brazilian Computing Society Conference (CSBC), the premier annual computer science event in Brazil, 2010. (invited)
Community ◇ Organization
- Co-Chair IEEE NetSciCom’15 TPC (http://www.netscicom.org)
- Co-organized Satellite Meetings @ ECCS’13 & ECCS’14: “Temporal Networks in Human Dynamics”
◇ Technical Program Committee
- WWW 2015 TPC
- ASONAM 2014 (book) TPC
- SIMPLEX 2013, 2014 (WWW Workshop) TPC
- INFOCOM 2013, 2014 TPC
- ICDCS 2013 TPC
◇ Reviewer
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- EPJ Data Science
- Internet Mathematics (IM)
- IEEE/ACM Transactions on Networking (ToN)
- IEEE/ACM Transactions on Information Theory (ToIT)
- IEEE Journal on Selected Areas in Communications (JSAC)
- IEEE Magazine
- IEEE Communications Letters
- Elsevier Computer Communications
References

Prof. Don Towsley  
University of Massachusetts at Amherst  
Computer Science Department  
140 Governors Drive  
Amherst, MA, 01003  
413-545-0207 (office)  
towsley@cs.umass.edu

Prof. Christos Faloutsos  
Carnegie Mellon University  
School of Computer Science  
5000 Forbes Ave.  
Pittsburgh, PA, 15213-3891  
412-576-7932 (cell)  
christos+@cs.cmu.edu  
mwalgora@cs.cmu.edu (secretary, faster response)

Prof. Ambuj Singh  
University of California Santa Barbara  
Computer Science Department  
3119 Engineering I  
Santa Barbara, CA, 93106-5110  
805-893-3236 (office)  
ambuj@cs.ucsb.edu

Prof. Michalis Faloutsos  
University of New Mexico  
Computer Science Department  
Engineering Building II, Rm 332  
Albuquerque, NM, 87131  
505-277-3112 (office)  
michalis@cs.unm.edu