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**University of Southern California**  
Viterbi School of Engineering  
Information Sciences Institute  
4676 Admiralty Way #1001, room 933, Marina del Rey, 90292, US

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## Appointments

- **Research Assistant Professor** — USC Department of Computer Science  
**Research Leader** — USC Information Sciences Institute (ISI)  
**University of Southern California:** Viterbi School of Engineering — Marina del Rey, California, CA (USA)  
Dates: 08/2016–present  
**Computer Scientist** — USC Information Sciences Institute (ISI) — Dates: 08/2015–07/2016
- **Senior Fellow** — Institute for Pure & Applied Mathematics (IPAM)  
**University of California Los Angeles** — Los Angeles, California, CA (USA)  
Dates: 01/2016–06/2016
- **Assistant Research Scientist** — Indiana University Network Science Institute (IUNI)  
**Indiana University** — Bloomington, IN (USA).  
Dates: 01/2015–07/2015
- **Postdoctoral Research Fellow** — School of Informatics and Computing  
**Indiana University**, Bloomington, IN (USA)  
Dates: 04/2012–12/2014
- **Visiting Researcher** — Royal Holloway University of London (UK) — Dates: 08/2011–03/2012
- **Visiting Researcher** — Vienna University of Technology (AU) — Dates: 02/2010–06/2010
- **Research Assistant** — University of Messina (IT) — Dates: 01/2010–12/2011

## Education

- **Ph.D.** in Mathematics & Computer Science (*Doctor Europaeus* honor) — University of Messina,<sup>1</sup> Italy.  
Dissertation: *Mining and analysis of online social networks*.  
Doctoral advisors: Alessandro Provetti, Robert Baumgartner, Alberto Paccanaro. Thesis advisor: Giacomo Fiumara.  
Dates: 01/2009–12/2011. Dissertation defense: March 26, 2012
- **M.Sc.** in Computer Science (*summa cum laude*) — University of Messina, Italy.  
Dissertation: *Design and Development of a Massively-Multiplayer Online Game*.  
Dates: 11/2006–07/2008.
- **B.Sc.** in Computer Science (*summa cum laude*) — University of Messina, Italy.  
Dissertation: *Optimization of the rail crossing of the Stretto di Messina using the RFID technology*.  
Dates: 09/2003–10/2006.

## Sponsored Projects

- 2017-19 *MITIGATE: Modeling Individual Trajectories and Incentives in Gamified Techno-social Systems*  
**DARPA Young Faculty Award 2016**  
**Principal Investigator:** This project will be funded by DARPA (currently under negotiation)  
Total amount: **\$1,000,000**
- 2015-16 *DOISAC: Detecting Orchestrated Information and Synthetic Account Campaigns* (ONR)  
**Principal Investigator:** This project is funded by the U.S. Office of Naval Research  
Total awarded amount: **\$150,000** (ONR-STTR N15A-T020)  
Collaborators: Alessandro Flammini (co-PI), Johan Bollen (co-PI)

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<sup>1</sup>PhD Program in Mathematics & Computer Science ranked 3<sup>rd</sup> in Italy and 58<sup>th</sup> worldwide: <http://www.leidenranking.com/ranking/>

- 2016 *SenseSaMo: the digital observatory for real-time monitoring of well-being in the city of Santa Monica*  
**Principal Investigator:** This project is funded by City of Santa Monica  
 Total awarded amount: **\$50,000** - Collaborators: Kristina Lerman (co-PI)
- 2016 *Enhancing e-cigarette surveillance with Twitter data*  
**Co-PI:** This project is funded by the Tobacco Center of Regulatory Science  
 Total awarded amount: **\$40,000** - Collaborators: Jon-Patrick Allem (PI)
- 2016-19 *EFFECT: Effectively Forecasting Evolving Cyber Threats* (IARPA)  
**Key Personnel:** This project is funded by the U.S. Intelligence Advanced Research Projects Activity  
 Collaborators: Kristina Lerman (PI), Craig Knoblock (co-PI)
- 2016-19 *SAFE: SIGINT-based Anticipation of Future Events* (IARPA)  
**Key Personnel:** This project is funded by the U.S. Intelligence Advanced Research Projects Activity  
 Collaborators: Aram Galstyan (co-PI)
- 2015-16 *Situational awareness for social media* (DARPA)  
**Key Personnel:** This project is funded by the U.S. Defense Advanced Research Projects Agency  
 Collaborators: Aram Galstyan (PI)
- 2012-15 *Detecting early signatures of persuasion in information cascades* (DARPA)  
**Postdoc:** This project is funded by the U.S. Defense Advanced Research Projects Agency  
 Collaborators: Alessandro Flammini (PI), Filippo Menczer (co-PI)

## Relevant publications [Google Scholar: >1,600 citations; h-index=24; <http://goo.gl/uEHS7U>]

◇ identifies highly cited papers or top publications

**Journals** [Impact Factors in brackets.]

1. ◇ **E Ferrara**, O Varol, CA Davis, F Menczer, A Flammini. **The rise of Social Bots.** *Communications of the ACM* 59(7):96-104, 2016. [3.301]
2. A Bessi, **E Ferrara**. **Social bots distort the 2016 U.S. Presidential election online discussion.** *First Monday*, 21(11), 2016.
3. VS Subrahmanian, A Azaria, S Durst, V Kagan, A Galstyan, K Lerman, L Zhu, **E Ferrara**, A Flammini, F Menczer. **The DARPA Twitter Bot Challenge.** *IEEE Computer* 49(6), 2016. [1.115]
4. S Agreste, S Catanese, P De Meo, **E Ferrara**, G Fiumara. **Network Structure and Resilience of Mafia Syndicates.** *Information Sciences* 351:30-47, 2016. [3.364]
5. P Singer, **E Ferrara**, F Kooti, M Strohmaier, K Lerman. **Evidence of Performance Deterioration in Online Peer Production.** *Plos One* 11(8): e0161636, 2016. [3.057]
6. CA Davis, GL Ciampaglia, LM Aiello, K Chung, MD Conover, **E Ferrara**, et al. **OSoMe: The IUNI Observatory on Social Media.** *PeerJ Computer Science* 2:e87, 2016.
7. JP Allem, **E Ferrara**. **The importance of de-biasing social media data to better understand e-cigarette-related attitudes and behaviors.** *Journal of Medical Internet Research* 18(8), 2016. [4.532]
8. ◇ Q Ke, **E Ferrara**, F Radicchi, A Flammini. **Defining and identifying sleeping beauties in science.** *Proceedings of the National Academy of Sciences* 112(24):7426-7431, 2015. [9.423]
9. J Kaur, **E Ferrara**, F Menczer, A Flammini, F Radicchi. **Quality versus quantity in scientific impact.** *Journal of Informetrics* 9:800-808, 2015. [2.373]
10. S Agreste, P De Meo, **E Ferrara**, S Piccolo, A Provetti. **Analysis of a heterogeneous social network of humans and cultural objects.** *IEEE Trans. Sys., Man and Cybernetics: Systems* 45(4):559-570, 2015. [1.598]
11. B Bonasera, **E Ferrara**, G Fiumara, F Pagano, A Provetti. **Adaptive search over sorted sets.** *Journal of Discrete Algorithms* 30:128-133, 2015.
12. S Agreste, P De Meo, **E Ferrara**, S Piccolo, A Provetti. **Trust Networks: Topology, Dynamics and Measurements.** *IEEE Internet Computing, PP*:99, 2015. [1.400]
13. **E Ferrara**, Z Yang. **Measuring Emotional Contagion in Social Media.** *PLoS ONE* 10(11):e0142390, 2015. [3.057]
14. **E Ferrara**, Z Yang. **Quantifying the Effect of Sentiment on Information Diffusion in Social Media.** *PeerJ Computer Science*, 1:e26 2015.

15. ◇P De Meo, **E Ferrara**, G Fiumara, A Provetti. **On Facebook, most ties are weak.** *Communications of the ACM* 57(11):78-84, 2014. [3.301]
16. ◇A Nematzadeh, **E Ferrara**, A Flammini, YY Ahn. **Optimal Network Modularity for Information Diffusion.** *Physical Review Letters* 113:088701, 2014. (Editors' Suggestion) [7.645]
17. ◇**E Ferrara**, P De Meo, S Catanese, G Fiumara. **Detecting criminal organizations in mobile phone networks.** *Expert Systems with Applications* 41(13):5733-5750, 2014. [2.981]
18. M JafariAsbagh, **E Ferrara**, O Varol, F Menczer, A Flammini. **Clustering memes in social media streams.** *Social Network Analysis and Mining* 4(237):1-13, 2014.
19. P De Meo, **E Ferrara**, D Rosaci, G Sarné. **Trust and Compactness in Social Network Groups.** *IEEE Transactions on Cybernetics PP*:99, 2014. [4.066]
20. S Agreste, P De Meo, **E Ferrara**, D Ursino. **XML Matchers: approaches and challenges.** *Knowledge-based systems* 66:190-209, 2014. [3.325]
21. ◇P De Meo, **E Ferrara**, G Fiumara, A Provetti. **Mixing local and global information for community detection in large networks.** *Journal of Computer and System Sciences* 80(1):72-87, 2014. [1.538]
22. ◇**E Ferrara**, P De Meo, G Fiumara, R Baumgartner. **Web data extraction, applications and techniques: a survey.** *Knowledge-based systems* 70:301-323, 2014. [3.325]
23. ◇MD Conover, **E Ferrara**, F Menczer, A Flammini. **The Digital Evolution of Occupy Wall Street.** *PLoS ONE* 8(5):e64679, 2013. [3.057]
24. ◇**E Ferrara**, AE Romero. **Scientific impact evaluation and the effect of self-citations: Mitigating the bias by discounting the h-index.** *Journal of the American Society for Information Science and Technology* 64(11):2332-2339, 2013. [2.452]
25. ◇P De Meo, **E Ferrara**, F Abel, L Aroyo, GJ Houben. **Analyzing user behavior across social sharing environments.** *ACM Transactions on Intelligent Systems and Technology* 5(1), art. 14:1-31, 2013. [2.414]
26. ◇MD Conover, CA Davis, **E Ferrara**, K McKelvey, F Menczer, A Flammini. **The Geospatial Characteristics of a Social Movement Communication Network.** *PLoS ONE* 8(3):e55957, 2013. [3.057]
27. ◇P De Meo, **E Ferrara**, G Fiumara, A Provetti. **Enhancing community detection using a network weighting strategy.** *Information Sciences* 222:648-668, 2013. [3.364]
28. ◇S Catanese, **E Ferrara**, G Fiumara. **Forensic analysis of phone call networks.** *Social Network Analysis and Mining* 3(1):15-33, 2013.
29. ◇**E Ferrara**. **A large-scale community structure analysis in Facebook.** *EPJ Data Science* 1(9):1-30, 2012. [1.567]
30. ◇P De Meo, **E Ferrara**, G Fiumara, A Ricciardello. **A novel measure of edge centrality in social networks.** *Knowledge-based Systems* 30:136-150, 2012. [3.325]
31. ◇**E Ferrara**. **Community structure discovery in Facebook.** *International Journal of Social Network Mining* 1(1):67-90, 2012.
32. ◇**E Ferrara**, G Fiumara. **Topological features of Online Social Networks.** *Communications on Applied and Industrial Mathematics* 2(2):1-20, 2011.

## Conferences

33. **E Ferrara**, W-Q Wang, O Varol, A Flammini, A Galstyan. **Predicting online extremism, content adopters, and interaction reciprocity.** *International Conference on Social Informatics 2016*, pp 22-39, 2016.
34. **E Ferrara**. **Social Politics: Agenda Setting and Political Communication in Social Media.** *International Conference on Social Informatics 2016*, pp 330-344, 2016.
35. **E Ferrara**, O Varol, F Menczer, A Flammini. **Detection of Promoted Social Media Campaigns.** *ICWSM 2016*.
36. Y-S Cho, G Ver Steeg, **E Ferrara**, A Galstyan. **Latent space model for multi-modal social data.** *WWW '16 Proceedings of the 25th International Conference on World Wide Web. Pages 447-458. ACM 2016*.
37. CA Davis, O Varol, **E Ferrara**, F Menczer, A Flammini. **BotOrNot: A system to evaluate social bots.** *WWW '16 Companion Proceedings of the 25th International Conference Companion on World Wide Web. Pages 273-274. ACM 2016*.

38. J Park, GL Ciampaglia, **E Ferrara**. **Style in the Age of Instagram: Predicting Success within the Fashion Industry using Social Media**. *CSCW '16 Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing*. Pages 64-73. ACM, 2016.
39. L Le, **E Ferrara**, A Flammini. **On predictability of rare events leveraging social media: a machine learning perspective**. *COSN '15: Proceedings of the 2015 ACM on Conference on Online Social Networks*. Pages 3-13. ACM, 2015.
40.  $\diamond$  **E Ferrara**, R Interdonato, A Tagarelli. **Online Popularity and Topical Interests through the Lens of Instagram**. *HT '14 Proceedings of the 25th ACM conference on Hypertext and social media*. Pages 24-34. ACM, 2014.
41. X Gao, **E Ferrara**, J Qiu. **Parallel clustering of high-dimensional social media data streams**. *IEEE/ACM CCGrid 2015*, pp. 323-332. IEEE, 2015.
42.  $\diamond$  O Varol, **E Ferrara**, C Ogan, F Menczer, A Flammini. **Evolution of online user behavior during a social upheaval. [Best Paper Award]**. *WebSci '14 Proceedings of the 2014 ACM conference on Web science*. Pages 81-90. ACM 2014.
43.  $\diamond$  **E Ferrara**, O Varol, F Menczer, A Flammini. **Traveling Trends: Social Butterflies or Frequent Fliers?**. *COSN '13 Proceedings of the first ACM conference on Online social networks*. Pages 213-222. ACM, 2013.
44.  $\diamond$  **E Ferrara**, M JafariAsbagh, O Varol, V Qazvinian, F Menczer, A Flammini. **Clustering memes in social media**. *ASONAM '13 Proceedings of the 2013 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*. Pages 548-555. ACM, 2013.
45. S Catanese, **E Ferrara**, G Fiumara, F Pagano. **A framework for designing 3D virtual environments**. *Lecture Notes: Institute for Computer Sciences, Social Informatics & Telecomm. Engineering 78:209-218*, 2012.
46. G Quattrone, L Capra, P De Meo, **E Ferrara**, D Ursino. **Effective retrieval of resources in folksonomies using a new tag similarity measure**. *CIKM '11 Proceedings of the 20th ACM international conference on Information and knowledge management*. Pages 545-550. ACM, 2011.
47.  $\diamond$  S Catanese, P De Meo, **E Ferrara**, G Fiumara, A Provetti. **Crawling Facebook for social network analysis purposes**. *WIMS '11 Proceedings of the International Conference on Web Intelligence, Mining and Semantics*. Article No. 52. ACM, 2011.
48. S Catanese, **E Ferrara**, G Fiumara, F Pagano. **Rendering of 3D dynamic virtual environments**. *SIMU-Tools '11 Proceedings of the 4th International ICST Conference on Simulation Tools and Techniques*. Pages 351-358. ACM, 2011.
49.  $\diamond$  P De Meo, **E Ferrara**, G Fiumara, A Provetti. **Generalized Louvain method for community detection in large networks**. *IEEE/ACM/WIC ISDA 2011*, pp. 88-93. IEEE, 2011.
50. P De Meo, **E Ferrara**, G Fiumara, A Provetti. **Improving recommendation quality by merging collaborative filtering and social relationships**. *IEEE/ACM/WIC ISDA 2011*, pp. 587-592. IEEE, 2011.
51. G Quattrone, **E Ferrara**, P De Meo, L Capra. **Measuring similarity in large-scale folksonomies**. *SEKE 2011: 23rd Inter. Conference on Software Engineering & Knowledge Engineering*, pp. 1385-391. 2011.
52. **E Ferrara**, R Baumgartner. **Design of automatically adaptable Web wrappers**. *ICAART 2011: 3rd International Conference on Agents and Artificial Intelligence*, pp. 211-216. 2011.
53. **E Ferrara**, R Baumgartner. **Intelligent self-repairable Web wrappers**. *Lecture Notes in Computer Science 6934:274-285 (Artificial Intelligence Around Man and Beyond)*, 2011.
54. **E Ferrara**, G Fiumara, F Pagano. **Living City, a collaborative browser-based massively multiplayer online game**. *SIMUTools '10 Proceedings of the 3rd International ICST Conference on Simulation Tools and Techniques*. Article No. 9. ACM, 2010.

## Workshops

55. **E Ferrara**, P De Meo, S Catanese, G Fiumara. **Visualizing criminal networks reconstructed from mobile phone records**. *ACM Hypertext 2014 (Doctoral Consortium / Late-breaking Results / Workshops)*, 2014.
56. P Moriano, **E Ferrara**, A Flammini, F Menczer. **Dissemination of scholarly literature in social media**. *Altmetrics Workshop*, 2014.
57. R Fulper, GL Ciampaglia, **E Ferrara**, YY Ahn, A Flammini, F Menczer, B Lewis, K Rowe. **Misogynistic Language on Twitter and Sexual Violence**. *Computational Approaches to Social Modeling Workshop*, 2014.

58. P De Meo, **E Ferrara**, D Rosaci, G Sarné. **How to improve group homogeneity in online social networks.** *CEUR Workshop Proceedings 1099:73-77 (14th Workshop “From Objects to Agents” WOA’13)*, 2013.
59. S Catanese, P De Meo, **E Ferrara**, G Fiumara. **Analyzing the Facebook friendship graph.** *CEUR Workshop Proceedings 685:14-19 (1st Workshop on “Mining the Future Internet”)*, 2010.

### Book chapters

60. **E Ferrara**. **Dynamics of attention and public opinion in social media.** *Communication Science in the Digital Age (Springer)*, 2017.
61. T Wu, B Zhang, CA Davis, **E Ferrara**, A Flammini, F Menczer, J Qiu. **Scalable Query and Analysis for Social Networks: An Integrated High-Level Dataflow System with Pig and Harp.** *Big Data in Complex and Social Networks*, 2015.
62. **E Ferrara**, S Catanese, G Fiumara. **Uncovering criminal behavior with computational tools.** *Social Phenomena: From Data to Models. Springer*, 2015.
63. X Gao, E Roth, K McKelvey, CA Davis, A Younge, **E Ferrara**, F Menczer, J Qiu. **Supporting a Social Media Observatory with Customizable Index Structures: Architecture and Performance.** *Cloud Computing for Data-Intensive Applications*, pp. 401-427. Springer, 2014.
64. **E Ferrara**. **Measurement and Analysis of Online Social Networks Systems.** *Encyclopedia of Social Network Analysis and Mining*, pp. 891-893. Springer, 2014.
65. S Catanese, P De Meo, **E Ferrara**, G Fiumara, A Proveti. **Extraction and analysis of Facebook friendship relations.** *Computational Social Networks: Mining and Visualization*, pp. 291-324. Springer, 2012.
66. P De Meo, **E Ferrara**, G Fiumara. **Finding similar users in Facebook.** *Social Networking and Community Behavior Modeling: Qualitative and Quantitative Measurement*, pp. 304-323. IGI Publish., 2011.
67. **E Ferrara**, R Baumgartner. **Automatic wrapper adaptation by tree edit distance matching.** *Combinations of Intelligent Methods and Applications*, pp. 41-54. Springer, 2011.

### Ph.D. Dissertation

68. **E Ferrara**. **Mining and analysis of online social networks.** *University of Messina, December 2011.*

### Editorials

69. **E Ferrara**. **Manipulation and abuse in social media.** *ACM SIGWEB Newsletter*, Spring 2015.
70. **E Ferrara**. **Toward computational crime prediction.** *Physics of Life Reviews*, pp. 28-29, 2015. [7.478]
71. GL Ciampaglia, **E Ferrara**, A Flammini. **Collective Behaviors and Networks.** *EPJ Data Science* 3:37, 2014.
72. **E Ferrara**, S Catanese, G Fiumara. **Criminal Network Analysis and Mining: Introduction.** *Social Informatics*, pp. 75-77, 2014.
73. **E Ferrara**. **How Twitter bots played a role in electing Donald Trump.** *WIRED*: <http://www.wired.co.uk/article/twitter-bots-democracy-usa-election>.  
*The Conversation*: [theconversation.com/how-twitter-bots-affected-the-us-presidential-campaign-68406](http://theconversation.com/how-twitter-bots-affected-the-us-presidential-campaign-68406).

### Under review

74. B Mönsted, P Sapiezynski, **E Ferrara**, S Lehmann. **Evidence of Complex Contagion of Information in Social Media: An Experiment Using Twitter Bots.** *Proceedings of the National Academy of Sciences*.
75. O Varol, **E Ferrara**, F Menczer, A Flammini. **Prediction and Detection of Social Media Campaigns.** *EPJ Data Science*.
76. O Varol, **E Ferrara**, CA Davis, F Menczer, A Flammini. **How many Twitter bots? Large-scale evaluation of social bot detection.** *ICWSM 2017*.

## Honors and Awards

- Awards

2016 I was selected as recipient of the **2016 DARPA Young Faculty Award** (\$1,000,000 grant)

2016 I was selected as recipient of the **2016 Complex Systems Society (CSS) Junior Scientific Award**

- 2016 I was named **Michael Keston Fellow** at the USC Information Sciences Institute
- 2016 I raised over **\$30,000** as *General Chair* of the conference “Social Informatics 2016” from industry partners such as Facebook, Microsoft, and Leidos.
- 2015 I was awarded full funding to attend the 3rd *Heidelberg Laureate Forum* (HLF) in Heidelberg, Germany, by the National Science Foundation (NSF) and Oak Ridge Associated Universities (ORAU) [**\$5,000**]
- 2014 I was awarded seed funding by the Indiana University Office of the Vice Provost for Research’s Proposal Development Services for a project entitled *Social Attention in Social and Techno-Social Systems* (with Eliot Smith)
- 2014 I was awarded seed funding by the Indiana University Office of the Vice Provost for Research’s Proposal Development Services for a project entitled *Creating a Computational Framework for Crime Characterization*
- 2014 I raised **\$28,750** as *Sponsor Chair* of the conference “ACM Web Science 2014” from industry partners such as Google, Facebook, and Microsoft.
- 2009-2011 I was awarded a **46,440€** *Ph.D. fellowship* from the Ministry of Education, Universities and Research (Italy).

#### • Recognition

- I was elected **Senior Fellow** of UCLA’s Institute for Pure and Applied Mathematics (**IPAM**)
- I was ranked 28th in the *Top 100 Big Data Experts to follow* list by Maptive (<https://www.maptive.com/the-top-100-big-data-experts/>).
- I received the **IBM Watson Analytics 2015 VIP Influencer in Big Data** award and a complimentary *VIP guest invitation* at the IBM Insight 2015 conference held in Las Vegas on Oct. 25-29 2015 [\$10,000].

#### • Ph.D. Dissertation

- My Ph.D. Committee granted me the prestigious title of “*Doctor Europaeus*”; it was the first and, as of 2016, only awarding of such title in the Dept. of Mathematics & CS of the University of Messina.
- Ph.D. Dissertation awarded at the “*5th EuroSys Doctoral Workshop*”, organized by University of Cambridge.
- Ph.D. Dissertation awarded at the “*2011 Future perspectives of applied mathematics in Italy*”, organized by The Italian Society of Applied and Industrial Mathematics (SIMAI).

#### • Best paper awards, covers and highlights

- Our contribution “The Rise of Social Bots” was the **cover** of the July 2016 issue of Communications of the ACM.
- I was selected by the Scientific Committee of the **Heidelberg Laureate Forum Foundation** (HLFF) to participate to the 3rd Heidelberg Laureate Forum, taking place August 23-28, 2015 in Heidelberg, Germany
- Our contribution “The Rise of Social Bots: Bot Detection in Social Media” won the **best poster award** at the 2015 Conference on Complex Systems (CCS 2015).
- The paper “Evolution of online user behavior during a social upheaval” won the **Best Paper Award** at the *ACM Web Science 2014 Conference* and was invited for a special issue on *The Journal of Web Science*.
- The paper “Clustering Memes in Social Media” has been selected among the **best papers** at *ASONAM 2013* and invited for a special issue on the journal *Social Network Analysis and Mining*, and eventually accepted.
- The paper “Generalized Louvain method for community detection in large networks” has been selected among the **best papers** at *ISDA 2011* conference, invited for a special issue on the *Journal of Computer and System Sciences*, and eventually accepted and published.
- The paper “Optimal Network Modularity for Information Diffusion”, published in the prestigious *Physical Review Letters*, was chosen as highlighted article (**Editors’ Suggestion**).

**Selected popular press** [Complete list of hundreds of news articles at: <http://goo.gl/FGd8gX>]

*How the Bot-y Politic Influenced This Election* (MIT Technology Review); *Facebook, Twitter & Trump* (The New York Review of Books); *How Twitter bots played a role in electing Donald Trump* (WIRED); *Twitter Bots Pollute Public’s Understanding of Politics* (Newsweek); *How Twitter bots helped Donald Trump win the US presidential election* (Arstechnica); *On Twitter, No One Knows You Are a Trump Bot* (Fast Company); *The Algorithmic Democracy* (Fast Co. Design); *Election 2016 Belongs to the Twitter Bots* (VICE); *Almost a fifth of election chatter on Twitter comes from bots* (Fusion); *How Twitter bots affected the US presidential campaign* (The Conversation); *Algorithm knows when corporate money is pushing memes online* (New Scientist); *The More You Comment Online, The Dumber Your Comments Become* (Huffington Post); *Pro-Trump Twitter Bots at Center of Nevada Mystery* (Wall Street Journal); *How Ebola infected Twitter* (Nautilus); *Is the internet making a world without truth?* (New Scientist); *Why you*

*need to purge your Twitter feed of angry people* (The Telegraph); *On Twitter, Is the Next POTUS a Bot-US?* (Wall Street Journal); *New data suggest social media brings out the best in us, after all* (Quartz); *Why cant Twitter kill its bots?* (Fusion); *The Science of a Supermodel* (Vogue); *Can You Scientifically Predict a Model's Success?* (New York Magazine); *Machine Learning Algorithm Predicts Which New Faces Will Make It as Fashion Models* (MIT Technology Review); *Slack Is Overrun With Bots.* (WIRED); *This new study suggests sad tweets make you sad* (Fusion); *Sleeping beauty papers slumber for decades* (Nature News); *Even Einsteins Research Can Take Time to Matter* (New York Times); *Bot or Not? By James Gleick* (The New York Review of Books); *Why Fear Spreads Faster Than Facts on Social Media* (Hootsuite); *In Social Networking, 'Weak' Connections May Be the Most Powerful* (Vice); *Fear, Misinformation, and Social Media Complicate Ebola Fight* (TIME); *How To Spot A Social Bot On Twitter* (MIT Technology Review); *This Algorithm Tells You If A Twitter Account Is a Spam Bot* (Mashable); *Barack Obama Is Probably a Robot, and Other Lessons from Bot Or Not* (Vice); *How online chatbots are already tricking you* (BBC); *Criminal gang connections mapped via phone metadata* (New Scientist); *How Italys Secret Police Use Metadata To Track Organized Crime* (Fast Company); *LogAnalysis maps the structure of gangs using phone records* (Engadget); *How to Detect Criminal Gangs Using Mobile Phone Data* (MIT Technology Review); *The Top Five Trend-Setting Cities on Twitter* (MIT Technology Review); *The Anatomy of the Occupy Wall Street Movement on Twitter* (MIT Technology Review); *Cell phone data analysis dials in crime networks* (Science News); *Facebook Builds Better Communities Than Twitter* (The Atlantic); *Facebook Builds Stronger Bonds Than Twitter, Study Says* (Mashable).

- **Data Science competitions**

- I am a top 0.5% Kaggle competitor (see my profile: <https://goo.gl/C09KWA>): I ranked highly in various competitions, including the Microsoft Academic Search and the Amazon data challenges.

## Activities, Outreach and Service

- **Organization**

- Conferences

1. **General Chair** of *SocInfo'16: 8th International Social Informatics Conference*. Seattle, WA (USA), November 2016.
2. **Sponsor Chair** and **Local co-Chair** of *ACM Web Science Conference (WebSci'14)*. Bloomington, IN (USA), June 2014.
3. **Publicity Chair** of *SocInfo'14: 6th International Social Informatics Conference*. Barcelona, Spain, November 2014.

- Workshops:

4. **Co-chair** of “*Computational Social Science: Social Contagion, Collective Behaviour, and Networks*” (CCS 2016 workshop). Amsterdam, The Netherlands, September 2016.
5. **Co-chair** of “*Computational Social Science: Social Contagion, Collective Behaviour, and Networks*” (ECCS 2015 workshop). Tampa, Arizona, September 2015.
6. **Co-chair** of “*Connecting Online and Offline Life*” (COOL 2014: WWW 2014 workshop). Seoul, Korea, April 8, 2014.
7. **Co-chair** of “*Computational Approaches to Social Modeling*” (ChASM 2014: WebSci 2014 workshop). Bloomington, IN (USA), June 23, 2014.
8. **Co-chair** of “*Computational Social Science: Social Contagion, Collective Behaviour, and Networks*” (ECCS 2014 workshop). Lucca, Italy, September 2014.
9. **Co-chair** of “*Criminal network analysis and mining*” (CRIMENET 2014: a SocInfo 2014 workshop). Barcelona, Spain, November 2014.
10. **Co-chair** of “*Collective Behaviors and Networks 2013*” (Covenant 2013: ECCS 2013 workshop). Barcelona, Spain, September 16-20, 2013.

- **Recent talks (2014-2016)**

- “*Social Politics: Agenda Setting and Political Communication in Social Media*”.
  1. Social Informatics 2016, Seattle, WA, USA. Nov. 2016
- “*Predicting human behaviors in techno-social systems: fighting abuse and illicit activities*”.

2. Chasm 2016: Computational Approaches to Social Modeling [keynote talk]. Seattle, WA, USA. Nov. 2016
3. Kobe University [invited talk]. Kobe, Japan. Sept. 2016
4. USC AI for Social Good center [invited talk]. Los Angeles, CA (US). Sept. 2016
5. HRL Laboratories [invited talk]. Malibu, CA (US). July 2016
6. Northwestern University [invited talk]. Evanston, IL (US). Feb. 2016
7. University of California, Los Angeles [invited talk]. Los Angeles, Jan. 2016
8. University of Southern California, IPAM [invited talk]. Los Angeles, CA (US). Jan. 2016
9. USC's Information Sciences Institute. Marina del Rey, CA (US). Apr. 2015 (<http://goo.gl/oJaVLo>)
10. Syracuse University [invited talk]. Syracuse, NY (US). Apr. 2015
11. Northeastern University [invited talk]. Boston, MA (US). Mar. 2015
12. New Jersey Institute of Technology. Newark, NJ (US). Mar. 2015
13. DARPA ADAMS/SMISC Meeting [invited talk]. Arlington, VA (US), Mar. 2015
- “On predictability of rare events leveraging social media: a machine learning perspective”
14. ACM COSN'15: ACM Conference on Online Social Networks. Stanford University, Stanford (US). Nov. 2015
15. CCS'15: Conference on Complex Systems [invited talk]. Tempe, AZ (US). Sept. 2015
- “Measuring emotional contagion in online social media”
16. CCS'15: Conference on Complex Systems [invited talk]. Tempe, AZ (US). Sept. 2015
- “The rise of social bots: fighting deception and misinformation on social media”.
17. CCS'15: Conference on Complex Systems [invited talk]. Tempe, AZ (US). Sept. 2015
18. Indiana University [invited talk]: Network Science talks. Bloomington, IN (US). Jan. 2015
19. Texas A&M University [invited talk]. Austin, TX (US). Sept. 2014
20. Denmark Technical University (DTU) [invited talk]. Copenhagen, Denmark. Sept. 2014
- “Connecting online and offline worlds with social big data”.
21. Royal Holloway University of London [invited talk]. London, UK, May 2014
22. USC Viterbi School of Engineering (ISI) [invited talk]. Marina del Rey, CA (US), May 2014.
23. Notre Dame University [invited talk]. Notre Dame, IN (US), Mar. 2014
24. Leibniz Institute for the Social Sciences [invited talk]. Cologne, Germany, Jan. 2014

#### • Editorial

- Editorial Board member of *Future Internet* (MDPI)
- Editorial Board member of *Data Science* (IOS Publishing)
- Lead Editor of *EPJ Data Science*'s thematic series “Collective Behaviors and Networks” (<http://goo.gl/jfVbZt>)
- Guest Editor of the “Computational Social Sciences” special issue on *Future Internet* (<http://goo.gl/04o9La>)

#### • Referee

- **Journals** — ACM Transactions on: (i) Information Systems; (ii) Knowledge Discovery from Data; (iii) Internet Technology; (iv) Intelligent Systems and Technology; Communications of the ACM; Complex Adaptive Systems Modeling; Computer Communications; Data Mining and Knowledge Discovery; EPJ Data Science; Entropy; Expert Systems With Applications; IEEE Transactions on: (i) Information Forensics and Security; (i) Cybernetics; (iii) Systems, Man and Cybernetics: Systems; (iv) Information Forensics & Security. Information Sciences; Journal of the American Society for Information Science and Technology; Journal of Computer-Mediated Communication; Knowledge-based systems; Network Science; Pervasive and Mobile Computing; PLoS ONE; Physica A; Nature Scientific Reports; Social Network Analysis and Mining; The Computer Journal; World Wide Web Journal.



- **Conference Program Committee** — **ICWSM 2017** (Senior PC); **WWW 2017** (Social Network track & Web Science track); **IJCAI 16**: 25th International Joint Conference on Artificial Intelligence; **ACM WebSci 16**: 10th Web Science Conference; **ICWSM 2016** (Senior PC); **WWW 2016** (Social Network track & Web Science track); **IC<sup>2</sup>S<sup>2</sup> 2016**: 2nd International Conference on Computational Social Science; **ICWSM 2015**; **WWW 2015** (Social Network track & Web Science track); **ASONAM 2015**: Advances in Social Network Analysis and Mining; **IC<sup>2</sup>S<sup>2</sup> 2015**: International Conference on Computational Social Science; **SocInfo 2015**; **SocialCom 2015**: 8th International Conference on Social Computing; **SocInfo 2014**: 6th International Conference on Social Informatics; **ICWSM 2014**: 8th International AAAI Conference on Weblogs and Social Media; **WWW 2014**: 23rd International World Wide Web Conference (Social Network track & Web Science track); **SocialCom 2014**: 7th International Conference on Social Computing; **SITIS 2014**: 10th International Conference on Signal-Image Technology & Internet-Based Systems; **WEB 2014**: Conference on Building and Exploring Web Based Environments; **CIKM 2011**: Conference on Information and Knowledge Management; **ISDA 2011**: International Conference on Intelligent Systems Design and Applications.
- **Workshop Program Committee** — **CompleNet2016**: 7th International Workshop on Complex Networks; **CSSWS 2015**: Computational Social Science Winter Symposium; **SideWays 2015**: Social Media World Sensors; **#Fail!**: Things that didn't work out in social media research; **Sednam 2014**: Socio-Economic Dynamics: Networks and Agent-based Models; **DataWiz 2014**: 1st International Workshop on Data Visualization; **DYAD 2014**: 1st Workshop on Interaction and Exchange in Social Media; **C-Big 2014**: International Workshop on Collaborative Big Data; **SNOW 2014**: Second Workshop on Social News on the Web; **SomNet 2012**: International Symposium on Collaboration, Social Computing, New Media and Networks; **SEBD 2011/2012**: Italian Symposium on Advanced Database Systems.
- **Grant panels member** — (2012) National Fund for Scientific and Technological Development: Chilean Government Commission; (2013) Federal Department of Economic Affairs, Education and Research: SERI/COST Action, Swiss Confederation; (2014) Austrian Science Fund: FWF.

#### • Open-source tools & data

- I lead the design and development of *Truthy 'Bot or Not?'* —the Twitter social bot detection framework openly accessible at: <http://truthy.indiana.edu/botornot>
- I developed and released *Conclude: a large scale network community detection framework*, and the *KPath: Random walk network weighting fast algorithm* (codes available at: <http://goo.gl/d39ouY>).
- I keep a repository of online platform datasets I collected for research purpose (including Facebook and Instagram), that I openly share with the community (data available at: <http://goo.gl/nhLJwJ>).

#### • Teaching

- 2016-17 USC **INF-599: Special Topics: Mining the Social Web** — Primary Instructor (Syllabus: <http://goo.gl/LfKIWR>)
- 2015-16 USC **CSCI-599: Special Topics: Social Networks** — Guest Lecturer  
**INF-549: Introduction to Computational Thinking and Data Science** — Guest Lecturer
- 2014-15 IU **INFO-I400/590: Mining the Social Web** — Primary Instructor  
 Course evaluation: 4.9/5 Outstanding Instructor - 4.1/5 Outstanding Course
- INFO-I400/590: Today's Privacy Challenges** — Guest Lecturer  
**INFO-I400/590: Large-scale Social Phenomena** — Guest Lecturer
- 2013-14 IU **INFO-I601: Introduction to Complex Systems** — Guest Lecturer  
**INFO-I690: Mathematical Methods for Complex Systems** — 15 Guest Lectures
- 2010-11 **Advanced Programming Languages, Algorithms and Data Structures, Programming Languages, Computer Architectures, Operating Systems** (University of Messina, Italy) — Lab Instructor (4 semesters)

#### • Mentoring

- 2016-2017 **University of Southern California**: Mentoring *Laura Alessandretti* (USC/ISI summer fellow PhD student), *Adam Badawy* (USC Dornsife PhD student), *Alessandro Bessi* (Postdoc), *Prathmesh Gat* (USC Viterbi MSc student), *Chiranth Gopal* (Viterbi-India program undergrad student), *Palash Goyal* (USC Viterbi CS PhD Student), *Margaret Martin* (USC Viterbi CS MSc student), *Simrat Singh* (USC Viterbi CS MSc student), and *Archit Srivastava* (USC Viterbi CS MSc student).
- 2015-2016 **Information Sciences Institute at USC**: mentored three graduate students.
- spring 2015 **Achievements of Women in STIM**: mentor and panel judge.
- spring 2015 **CNetS Lab at Indiana University**: I am mentored five graduate students.

2012-14 **CNetS Lab at Indiana University**: I mentored three graduate students in 2012, seven in 2013, and eight in 2014, for a total of *fifteen different graduate students* mentored at IU during my postdoctoral activity.

summer 2013 **Women SROC (Summer Research Opportunities in Computing) at Indiana University**: I supervised two STEM Informatics BSc summer students at Indiana University.

2010-12 I supervised four BSc. and one MSc. candidates in Computer Science at the University of Messina, Italy.