Onur VAROL

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School of Informatics and Computing Indiana University
919 E. 10th St, Bloomington IN, 47408, USA

RESEARCH INTERESTS

Complex Systems, Network Science, Data Science, Machine Learning, Computational Social Science

EDUCATION

Indiana University, Bloomington, IN. USA
Ph.D., Complex Systems track of the Ph.D. in Informatics and minor in Statistics (expected graduation date: June 2017)
Dissertation: Analyzing Social Big Data to Study Online Discourse and its Manipulation
Committee: Filippo Menczer (chair), Alessandro Flammini, Yong-Yeol Ahn, Christine L. Ogan, Weihua An

Koç University, Istanbul, Turkey
M.Sc., Computer Science and Engineering, (July 2012)
Thesis: Modal analysis of Myosin II and Identification of Functionally Important Sites
Advisors: Deniz Yüret, Alkan Kabakçıoglu

Istanbul Technical University, Istanbul, Turkey
B.Sc., Electronics Engineering, (June 2010)
B.Sc., Physics Engineering, (June 2012)

PUBLICATIONS

Journal Articles

J.6 C. Ogan, **O. Varol "Combining Content Analysis with Network Analysis in the Study of a Social Movement: Twitter Use During Gezi Park Protests"**, Information, Communication and Society 1-19, 2016

J.5 E Ferrara, **O Varol**, C Davis, F Menczer, A Flammini **"The Rise of Social Bots"**, Communications of the ACM 59(7):96-104, 2016

J.4 Davis CA, Ciampaglia GL, Aiello LM, Chung K, Conover MD, Ferrara E, Flammini A, Fox GC, Gao X, Gonçalves B, Grabowicz PA, Hong K, Hui P, McCaulay S, McKelvey K, Meiss MR, Patil S, Peli Kankanamalage C, Pentchev V, Qiu J, Ratkiewicz J, Rudnick A, Serrette B, Shiralkar P, **Varol O**, Weng L, Wu T, Younge AJ, Menczer F. **"OSoMe: The IUNI observatory on social media"**, PeerJ Computer Science

J.3 V.S. Subrahmanian, A. Azaria, S. Durst, V. Kagan, A. Galstyan, K. Lerman, L. Zhu, E. Ferrara, A. Flammini, F. Menczer, R. Waltzman, A. Stevens, A. Dekhtyar, S. Gao, T. Hogg, F. Kooti, Y. Liu, **O. Varol**, P. Shiralkar, V. Vydiswaran, Q. Mei, T. Huang. **"The DARPA Twitter Bot Challenge"**, IEEE Computer 49(6), 2016

J.2 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

J.1 **O. Varol**, D. Yuret, B. Erman, A. Kabakçıoglu **"Mode coupling points to functionally important residues in Myosin II"**, PROTEINS: Structure, Function, and Bioinformatics

Conference Proceedings

C.12 Olteanu, A., **Varol, O.**, Kiciman, E. **"What Does Social Media Say about the Outcomes of Personal Experiences"**, CSCW'17

C.11 Ferrara E., Wang W., **Varol O.**, Flammini A., Galstyan A. **"Predicting online extremism, content adopters, and interaction reciprocity"**, SocInfo'16

C.10 **O Varol**, **Spatiotemporal Analysis of Censored Content on Twitter**. WebScience'16

C.9 A Das, S Gollapudi, E Kiciman, **O Varol**, **Information Dissemination in Heterogeneous-Intent Networks**. WebScience'16

C.8 E. Ferrara, **O Varol**, F Menczer, and A Flammini. **"Detection of Promoted Social Media Campaigns"**. ICWSM'16

C.7 A Olteanu, **O Varol**, E Kiciman. **"Towards an Open-Domain Framework for Distilling the Outcomes of Personal Experiences from Social Media Timelines"**. ICWSM'16

C.6 C Davis[†], **O Varol**[†], E Ferrara, A Flammini, F Menczer **"BotOrNot: A System to Evaluate Social Bots"**. WWW'16 Developers Day

C.5 **O Varol**, E Ferrara, C Ogan, F Menczer, and A Flammini. **"Evolution of online user behavior during a social upheaval"**. ACM Web Science Conference 2014 (**Best paper award**)

C.4 **O Varol** and F Menczer. **"Connecting Dream Networks Across Cultures"**. WWW 2014 workshop on "Connecting Online & Offline Life" (COOL)

C.3 Ferrara, E., **Varol, O.**, Menczer, F. & Flammini, A. **"Traveling Trends: Social Butterflies or Frequent Fliers?"**, ACM Conference on Online Social Networks (COSN 2013)

C.2 E Ferrara, M JafariAsbagh, **O Varol**, V Qazvinian, F Menczer, A Flammini **"Clustering Memes in Social Media"**, ASONAM 2013

C.1 Yasemin Alban; Tuba Ayhan; **Onur Varol**; Müştak Erhan Yalçın **"A Feature Filtering Method for EEG Data Classification"**, Signal Processing and Communications Applications (SIU), IEEE 19th Conference, Antalya, April 20-22 2011.

CONDUCTED RESEARCHES AND ACADEMIC EXPERIENCE

Research

DOISAC: Project name stands for "Detecting Orchestrated Information and Synthetic Account Campaigns". This project founded by the Office of Naval Research aims at detecting orchestrated information and synthetic activity campaigns on social media using machine learning and computational tools.

>   PIs: Dr. Emilio Ferrara, Assoc. Prof. Alessandro Flammini,

DESPIC: Project name stands for "Detecting Early Signature of Persuasion in Information Cascades" and aims to design a system detect persuasion campaigns at their early stage of inception, in the context of online social media. This project founded by DARPA SMISC program.

>   PIs: Assoc. Prof. Alessandro Flammini, Prof. Fil Menczer

Truthy: This project aims to understand how information propagates through complex sociotechnical information networks. In this project, I analyzed and studied roles of individuals during social upheavals, diffusion of trending topics in spatio-temporal space. I also worked on classification of social bots.

>   PIs: Assoc. Prof. Alessandro Flammini, Prof. Fil Menczer

Research on Modal analysis of Myosin II and Identification of Functionally Important Sites: During my Master's studies in Koc University, I worked on analysis of protein fluctuations to identify functionally important residues as my thesis project.

>   Advisors: Assoc. Prof. Deniz Yüret, Assist. Prof. Alkan Kabakçıoglu

Research on Modeling of Social Networks and Phase Transitions of Complex Systems (Graduation project for B.Sc in Physics Engineering)

>   Advisor: Prof. Ayse Erzan

Research on EEG Signal Processing and Classification (Graduation project for B.Sc in Electronics Engineering)

>   Advisor: Prof. Müstak Erhan Yalçın

Teaching Assistant

Indiana University, Bloomington IN, USA
> Topics in Informatics: Performance Analytics (Spring 2017)

Koç University, Istanbul, Turkey
> Machine Learning (Spring 2012)
> Microprocessors (Fall 2011)
> Probability and Random Variables (Spring 2011)
> Discrete Mathematics (Fall 2010)

WORK EXPERIENCE	**Microsoft Research**, Redmond WA, USA Research Intern (June 2015 - September 2015): I worked in CLUES group at MSR. I studied social media timelines of individuals to detect experiential activities and analyzed outcomes of those actions. This projects involves analyzing search query logs and social media timelines. **Microsoft Research**, Redmond WA, USA Research Intern (June 2014 - September 2014): I worked in CLUES group at MSR. I studied how individuals in social networks adopts their behavior to match with their inner intents. I carried out experiments on Amazon Mechanical Turk platform to justify our hypothesis in micro level and analyzed Twitter data to validate effects on macro level. **Stonefish Software Consultant**, Istanbul, Turkey Software Developer (August 2009 - March 2010): I worked on an enterprise web application development using C♯, ASP.NET, MSSQL.
HONORS AND AWARDS	Best paper award (WebSci'14) Best poster award (CCS'15) Travel grants: SIGWEB for WebSci'16 (750$), ICWSM'16, (350$), ACM for COSN'14 (1,500$), IU RKCSI for INFORMS'16 (500$) Research Assistantship Indiana University (2012-2016) Scholarship from TUBITAK(2010-2012) Graduate scholarship from Koç University (2010-2012) Electrical Engineering Society (EMO) Project Competition 1st Rank (2010) Bosch Scholarship for Undergraduate Education (2009) Istanbul Technical University Student Council Vice President (2009)
TALKS AND EVENTS	**Invited Talks** • Analysis of Online Discourse and Information Diffusion, INFORMS Meeting Nashville (11/15/2016) • Detection of Online Manipulation, UND Big Data Summit Event (04/07/2016) • Twitter Applications: Industry Panel Speaker, UND Big Data Summit Event (04/07/2016) • Campaign and Social Bots Detection on Social Networks, Workshop in Network Science (WINS) Indiana University (02/18/2016) • Evolution of online user behavior during a social upheaval, Indiana University Turkish Flagship Center (01/21/2015) • Studying Social Dynamics Through Social Media, Istanbul Technical University Physics Department Colloquia (04/28/2014)
COMPUTER AND LANGUAGE SKILLS	**Programming Languages and Skills:** Frequent user of Python for data analysis using Matplotlib, NetworkX, Pandas, Scikit-learn, etc. Experience in LaTeX, C / C++, C♯, Java, MATLAB, R, OpenBUGS Familiar with HTML, CSS, JS for frontend, Flask, Django, and ASP.NET for larger applications Used MySQL, NoSQL (CouchDB and Riak), Map-Reduce View projects on Github: github.com/onurvarol **Languages:** English (fluent), German (beginner), Turkish (native)
COMMUNITY SERVICE	**Workshop co-chair**: Open Science for an Open Society (CCS'16) **Conference PC member**: WWW'17, ICWSM'17 **Conference subreviewer**: ICWSM'15, IC2S2'15, ASONAM'15, WebScience'14 **Journal reviews**: PLoS One, Network Science
INTERESTS	I enjoy playing basketball and foosball. I also love traveling a lot and feeling wanderlust, you can visit my online travel journal (onurvarol.com/my_travels).