Workshop Proposal, Social Informatics 2016

Viral Memetics

Organizing Committee

William H. Hsu (bhsu@ksu.edu) Google Voice (office/mobile): +1 785 236 8247 Dept. of Comp. Science, Kansas State University 2184 Engineering Hall 1701D Platt Street, Manhattan, KS 66506 http://www.cs.ksu.edu/~bhsu	**Kimberly Knight (kak102020@utdallas.edu)** Office: +1 972 883 4346 Emerging Media & Comm., Univ. of Texas at Dallas Arts and Technology Program, ATC10 800 W. Campbell Rd., Richardson, TX 75080-3021 http://www.utdallas.edu/atec/artstechnology/knight
Joshua Weese (weeser@ksu.edu) Office: +1 620 639 1475 Dept. of Comp. Science, Kansas State University 2184 Engineering Hall 1701D Platt Street, Manhattan, KS 66506	

Workshop Logistics

The workshop is proposed as a full-day event featuring morning and afternoon technical sessions. In the spirit of fostering new research and collaboration, care will be taken to maximize available time for discussions and questions. The program committee will aim at accepting about 6-8 technical papers for full oral presentation.

Abstract

Scope and Focus

This workshop focuses on analyzing and understanding both the quantitative and qualitative spread of derivative ideas. Of particular interest are linguistic memes such as memorable quotations and variants thereof, unique hashtags and phrases, visual memes and their variants, and identifiable elements of viral videos. Another core focus is the tracking and prediction of viral spread, and the identification of derivative works. The target audience includes social scientists specializing in computer-mediated communications, network scientists, computational linguists, and researchers in the psychology of visual and audiovisual media.

Active research areas that are relevant to viral memes include:

- Predictive analytics of viral sharing of content
- Tracing the origin, provenance, and modification of viral material
- Understanding the inductive causes of virality, deliberate and intrinsic (cf. Kleinberg)
- Community detection and formation modeling using the spread of viral content
- Viral marketing
- Modeling of link types and relationship strength
- Path-based similarity measures and relationship extraction
- Applications to modeling of weblogs, social media, social networks, and the semantic web

The emphasis of this workshop shall be approaches based on analysis of viral content and spread from sources including but not limited to: social media, social news, collaboration networks, and document collections.

Application areas that often exhibit a need for viral memetic analysis include:

- **Trends:** trending topics in social media; hype index; communities, networks, and wikis (e.g., in education research)
- **Internet humor:** viral images, memes (cf. Know Your Meme)
- **Online political communications:** opinion, position, or campaign memes, lampoons
- **Marketing and social recommender systems:** communities, experts, friends, products, reviewers, providers
- **Information diffusion and sharing systems:** social media (opinions and sentiments, meme propagation, viral content, political commentary, etc.)
- **Other behavioral modeling:** community dynamics, recruitment and mass activity, large-scale patterns, traffic, spatiotemporal effects
- **Application areas:** social informatics of meme adaptation, public service announcements, cybersecurity (PSAs, anthropological aspects of security, trust networks)

Intended Audience and Impact

We welcome paper submissions from researchers in all areas of the study of memes and viral informatics listed in the above section describing the workshop scope. We also hope to attract SocInfo participants from industrial R&D with interesting current applications that showcase aspects of heterogeneity in social and other networks.

This workshop shall help to bring together people from these different areas and present an opportunity for researchers and practitioners to share new techniques for identifying and analyzing relationships in networks that integrate multiple types or sources of information. We also propose to coordinate with research communities in related areas of specialization such as: **social influence, trending topics, community detection, and heterogeneous information network analysis** to find opportunities for cross-fertilization and interdisciplinary collaboration.

Relevant media include, but are not limited to, forums, blogs, systems such as Twitter, YouTube, Facebook, Pinterest, Tumblr, Snapchat, Google+, LinkedIn, *etc.* Of particular interest are descriptive metadata, content admitting audiovisual analysis (including deep learning for action or event recognition, sentiment analysis, etc., in images and video), spatiotemporal and network traffic statistics, tracking mechanisms, and forensic (e.g., stylographic) analysis of content modification. However, the scope is not limited to any particular approach to link analysis or any source of viral meme information such as image or text corpora.

Potential Speakers, Panels, or Other Activities

Proposed Schedule, Panels and Activities

Following brief welcoming remarks, a 3-hour morning session will consist of approximately half the oral technical presentations. The morning session will feature a panel discussion on viral memetics as a science and featuring invited panelists from industry and academia, who will be invited to discuss theory of computer-mediated communication (CMC), application domains, test beds, and available open data for research. A single 30-minute invited talk in the morning will be aimed at serving the interests of a variety

of intelligent systems researchers and attracting new researchers to the topic of heterogeneous information networks.

The afternoon session will include the second half of the technical papers. The afternoon session will conclude with an optional poster session and a brief open discussion about possible special issues of journals on the topic. The goal of both concluding sessions is to provide additional opportunities for cross-fertilization between academic and industrial research, through introduction of applications and methodologies that may otherwise be unfamiliar to participants in diverse areas.

Potential Invited Speakers

danah boyd, Microsoft Research
Bo Pang, Google
William Cohen, CMU

Proposed Evaluation and Selection Process for Workshop Submissions

Submission Mechanism and Peer Review Process

Submissions will be handled through *EasyChair*. A program committee of five to ten members will be prepared to review anywhere from six to several dozen submissions (with 10-15 expected). The expected reviewing load is 2-3 papers per reviewer. Three reviewers will typically be assigned, including organizing committee members where there are no conflicts of interest with authors. The program committee will be chaired by members of the organizing committee (Hsu and Knight) and will practice single-blind peer review, double-blind where feasible.

Papers will be due soon after the acceptance decision date of 20 Aug 2016 for the main SocInfo conference. Authors will be notified of acceptance decisions within one month, as soon after the camera-ready copy deadline for the main conference as possible.

Calls for Papers and Publication

A web site will be created by the organizers that contains the call for papers (CFP) and links to the workshop schedule and to EasyChair. The URL of this site and the schedule will be posted to *WikiCFP*, and to relevant web sites for social informatics, data science, knowledge discovery in databases, machine learning, and artificial intelligence. This CFP will also be distributed via social media and online through mailing lists and web sites of relevant academic journals, as time until the workshop permits.

Publication of the working notes will be sought through the conference publishers (or online via CS-WEUR if the working notes are not published).

Potential Program Committee

Media Science and Digital Humanities

Kimberly Knight, University of Texas at Dallas (USA) – organizing committee
Mark Crosby, Kansas State University (USA)

Computer Science

William H. Hsu, Kansas State University (USA) – organizing committee
Joshua L. Weese, Kansas State University (USA) – organizing committee
Nicholas Nicolov, OpenTable (USA)
Natalie Glance, Duolingo (USA)
Jie Tang, Tsinghua University (China)

Historical Information on Previous Iterations of Proposed Workshop

N/A

List of Relevant Prior Workshops and Conferences

Workshops Held Previously at Related Conferences (last 2 years, reverse chronological order)

- IJCAI HINA 2016 – 4th workshop on Heterogeneous Information Network Analysis, 10 Jul 2016
  Chaired by William Hsu. Tangential relevance in overlapping area of information propagation and collaboration/citation networks.
- IJCAI SocInf 2016 – 2nd workshop on Social Influence, 09 Jul 2016
  (http://socinf2016.isistan.unicen.edu.ar)
  Chaired by other colleagues. Relevant to social recommendation aspect of virality.
- IJCAI SocInf 2016 – 1st workshop on Social Influence, 27 Jul 2016
  (http://socinf2015.isistan.unicen.edu.ar)
  Chaired by other colleagues. Relevant to social recommendation aspect of virality.
- IJCAI HINA 2015 – 3rd workshop on Heterogeneous Information Network Analysis, 25 Jul 2016
  Chaired by William Hsu. Tangential relevance in overlapping area of community detection.

Other Conferences Related to Proposed Topic (last 2 years, reverse chronological order)

- User Modeling, Adaptation, & Personalization: UMAP 2016, 13-16 Jul 2016
- International Conference on Weblogs and Social Media: ICWSM 2016, 18 – 20 May 2016
- UMAP 2015, 23 Jun – 03 Jul 2015
- ICWSM 2015, 26-29 May 2015

Previous Relevant Events that Inspired the Proposed Workshop

- Keynote talk by J. Kleinberg, IJCAI 2013
- ICWSM 2011 data challenge: Arab Spring & green revolution

History of Past Workshops Chaired by Organizers

The chairs have over 15 years of combined experience in planning and organizing workshops at IJCAI and the organizing chair has organized five previous IJCAI workshops beginning in 2001.

HINA has been a success at IJCAI 2011, 2013, and 2015: reasonably well-attended, with up to 20 participants and 6 refereed paper presentations per workshop. At IJCAI 2011 (Barcelona) and IJCAI 2013 (Beijing) there was copious discussion and breakout sessions during lunch breaks that led to follow-up collaborations. We think this indicates good potential for a poster session, a possible journal special issue

or Springer LNCS volume as the subarea begins to attain maturity, and more interaction through panel sessions of the kind employed in our first IJCAI (2001 and 2003) and AAAI/KDD/UAI (2002) workshops.

One important lesson learned from the first three HINA workshops was the importance of early publicity and coordination with chairs of related workshops. Following the advice of reviewers for HINA 2015, the chairs reached out to the organizers of the 2nd Social Influence (SocInf) workshop at IJCAI 2015, but most cross-fertilization happened during or after the conference. This will be a first priority at IJCAI 2016.

Organizing Chair Bio

William H. Hsu is an associate professor of Computer Science at Kansas State University. He received a B.S. in Mathematical Sciences and Computer Science and an M.S.Eng. in Computer Science from Johns Hopkins University in 1993, and a Ph.D. in Computer Science from the University of Illinois at Urbana-Champaign in 1998. His dissertation explored the optimization of inductive bias in supervised machine learning for predictive analytics. At the National Center for Supercomputing Applications (NCSA) he was a co-recipient of an Industrial Grand Challenge Award for visual analytics of text corpora. His research interests include machine learning, probabilistic reasoning, and information visualization, with applications to cybersecurity, education, digital humanities, geoinformatics, and biomedical informatics. Published applications of his research include structured information extraction; spatiotemporal event detection for veterinary epidemiology, crime mapping, and opinion mining; analysis of heterogeneous information networks. Current work in his lab deals with: data mining and visualization in education research; graphical models of probability and utility for information security; developing domain-adaptive models of large natural language corpora and social media for text mining, link mining, sentiment analysis, and recommender systems. Dr. Hsu has over 50 refereed publications in conferences, journals, and books, plus over 35 additional publications.