

Undergraduate Research Symposium May 18, 2018 Mary Gates Hall

Online Proceedings

POSTER SESSION 2

Commons West, Easel 5

1:00 PM to 2:30 PM

No, You're Fake News: Crowdsourcing User Reports to Improve Techniques for Countering Misinformation

Cole Chamberlin, Senior, Applied & Computational Mathematical Sciences (Discrete Mathematics & Algorithms), Informatics

Ethan Wesley Anderson, Senior, Informatics

Evan James Frawley, Senior, Informatics

Lucy Eun, Senior, Informatics

Mentor: Amirah Majid, The Information School

Mentor: Jevin West, Information School

Misinformation has flourished in the wake of the internet boom. Due to the increased velocity and volume of the information being generated, accurate and efficient identification of misinformation is a high priority for fact-checking organizations. Snopes.com, “the oldest and largest fact-checking site on the internet”, crowd-sources reports from their large user base to inform their journalists about which topics to cover. In this study, we analyze methods for increasing both the quantity and quality of user submissions. We decrease the cognitive load imposed by the Snopes reporting system through a simplified user interface. We also utilize clustering and labeling techniques to aggregate user reports and make them more actionable. To collect initial data for our study, we enhance the user experience and metadata collection of a web-based content reporting system used by Snopes. We develop an analytics framework to clean and aggregate the reports, with the goal of decreasing the lag between initial rumor creation and the response from Snopes. We develop metrics based on article metadata to quantify rumor virality and corresponding Snopes rebuttals. The results of this study show improvements to the process of collecting data that informs fact-checking organizations. Our methods reduce the manual curation required by fact-checking journalists, which enable them to reallocate their resources to debunking rumors.

POSTER SESSION 3

Commons West, Easel 7

2:30 PM to 4:00 PM

Automatically Classifying Art Images Using Computer Vision

Chris (Bum Mook) Oh, Senior, Informatics

Mary Gates Scholar

Daniel Thomas Merchant, Senior, Informatics

Mentor: Jevin West, Information School

Millions of art images have been digitized over the last several decades. This has created new opportunities for art scholars and historians. However, searching and navigating these art images is difficult because of the sparsity of the metadata and contextual information used to describe these images. Unless one knows the exact title and artist, finding related paintings is a difficult task without the metadata. The research in this project addresses this challenge by developing unsupervised computer vision methods that will extract metadata automatically from paintings. Our dataset will include more than 2 million art images from Artstor, a non-profit organization that distributes art images to libraries and universities. If successful, we plan to build an interactive interface for exploring the extracted features and for developing a recommender system that could be used on platforms such as Artstor.

POSTER SESSION 3

Balcony, Easel 101

2:30 PM to 4:00 PM

Fabric Form Concrete + DUO System

Ruisheng (Sean) Yang, Senior, Architectural Design

Morocco McClay Branting, Junior, Architectural Design

Mentor: Tyler Sprague, Architecture

Mentor: Mark West

Our work is an attempt to revolutionize the building industry by rethinking concrete formwork by eliminating dimensional timber formwork and replacing it with a combination of the existing PERI modular formwork system, fabric, and various constructed inserts. Not only would the customizable secondary systems we have studied be cheap to construct either on site or in a factory alongside PERI modular parts, but they would also be reusable, perhaps indefinitely. In the long run this system could minimize cost on a single job site as well as overall - as the formwork is reusable, highly mobile, flexible, and quick to install. Our system also introduces controlled organic forms, often avoided in concrete due to the difficulty of shaping rigid formwork. By using fabric, complex curvatures

can be achieved that are created wholly by setting parameters (fabric excess, insert pieces, etc.) And letting the forces of hydrostatic pressure naturally dictate the ultimate form and aesthetic.