

Cmpe 58H: Social Semantic Web

Suzan Uskudarli

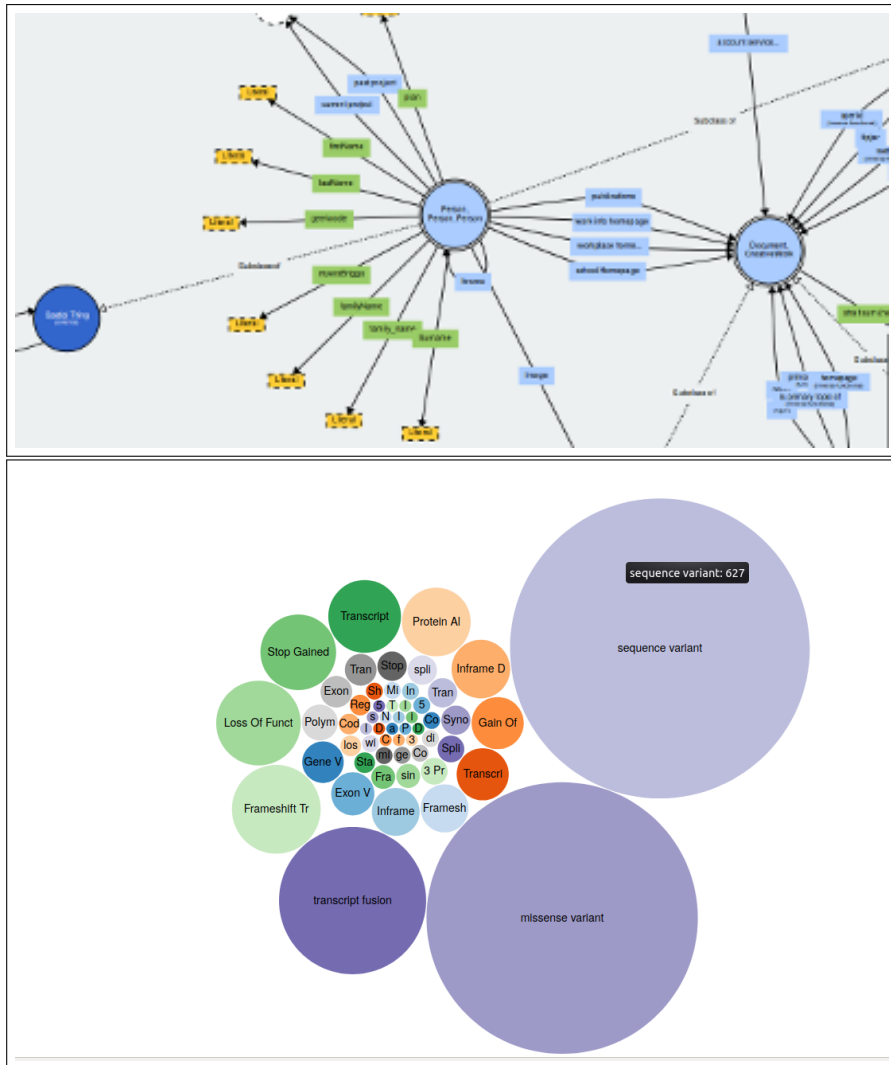
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E-mail: suzan.uskudarli@boun.edu.tr

Office Hours: M 14:00-15:00

Class Hours: Thursday 14:00-16:50

Communication: Zoom (by appointment)



Course Description

Online participatory applications such as Wikipedia, LinkedIn, Facebook and weblogs have become widely popular and influential. These applications support user generated content that is often further enriched with tags, comments, ratings provided by other users. Such applications have transformed novice users into content publishers and have resulted in some highly successful applications such as Wikipedia. An important shortcoming of these environments is that their content is mostly human interpretable.

Semantic Web technologies allow semantically structuring content so that it is machine interpretable. These technologies have been around for a long time, yet their wide scale impact is only recently beginning to emerge. Web 3.0 is a term used to describe collaborative content that is rendered powerful through employing Semantic Web technologies, which makes content machine interpretable. In another words, Web 3.0 aims to facilitate an executable Web. The challenge here is maintaining a participatory and therefore a usable environment while also supporting semantically structured content. The application of such technology has a wide range of uses as is evidenced by cross-domain resources such as DBPedia (semantically represented Wikipedia), Wikidata (semantically represented resources), and resources dedicated to life sciences such as Open Biological and Biomedical Ontologies (OBO) Foundry. The linked data project (linked-data.org) collects such data resources.

Tim Berners-Lee (The inventor of The World Wide Web) frequently talks about a Web will have richly interconnected semantic content along with information about the participants and their social graph. This view emphasizes the significance of the participants and therefore their explicit representation on The Web. Furthermore, such social networks are analyzed with social network analysis methods that provide insights about the spread of epidemics, elections, fake news, and much more.

We will investigate the recently re-emerged re-decentralization of the Web in the context of SOLID (social linked data) which is a proposed set of conventions and tools for building decentralized networks. These conventions rely on numerous W3C standards and protocols which enable the Web that render content processable via semantic searching and inference.

Course Structure

Class Structure

During this course we make a collective effort to learn and expand our knowledge about representing and understanding social networks and the representation of domains of knowledge on the web (semantic web). During our inquiries, we will use digital platforms as a collective space for expressing our ideas and sharing information. We will have a reading list that we will collectively examine.

Furthermore, there isa term project, which will also serve as points of discussion in our weekly meetings. You will make a couple of presentations related to your project during the semester.

Weekly meeting goals

During this course we make a collective effort to learn and expand our knowledge about representing and understanding social networks and the representation of domains of knowledge on the web (semantic web). During our inquiries, we will use digital platforms as a collective space for expressing our ideas and sharing information.

Each week will have a topic that we will collectively discuss. You are expected to prepare for this discussion by reading and summarizing the material. Additionally you will write a blog per week (you may write more if you like). We also read each others blogs, which turn out to greatly enrich our in class discussions. Finally, we pay attention to the news and developments related to this field (which is in abundance) and have a “what’s new?” segment at the beginning of each course.

The weekly sessions tend to be active, interesting, and fun. Since we cover the topics in a cumulative manner via ongoing discussions, they build up gradually.

We will have a repository where we keep our collective information that we will build on throughout the semester. We may likely have our slack channel to share impromptu comments and information.

Recommended books

- Breslin, J.G., Passant, A. and Vrandečić, D., 2011. Social semantic web. In Handbook of Semantic Web Technologies (pp. 467-506). Springer, Berlin, Heidelberg.
- Mika, P., 2004, September. Social networks and the semantic web. In Proceedings of the 2004 IEEE/WIC/ACM International Conference on Web Intelligence (pp. 285-291). IEEE Computer Society.

Communication

All off-line communication about this course will be carried out a GitLab repository and slack. The platform will be enabled when this course starts.

Grading Policy

You will be evaluated based on your participation and communication (oral and written) during the semester.

Criteria	Percent
In class and online participation	40
Project	40
Final exam	20

The final exam is a take home exam that involves reflecting on the material read, in class discussion, and your projects. You will be able to utilize tools that you have learned about to offer proof of concepts and experimentation.

Course Policies

During Class

This course requires active engagement with topics that requires demonstrations and research using computers. We are careful to pay attention to whomever may be speaking and practive active listening. In other words, we refrain from engaging on activities unrelated to the class.

Attendance Policy

Attendance is expected to all classes, since we are conducting a collective inquiry.