Research Class i predstavljanje istraživanja Laboratorija za semantičke tehnologije

U petak, 16. prosinca 2022. godine s početkom u 14:00 sati u predavaoni S-32 održat će se dva Research Class predavanja članova Laboratorija za semantičke tehnologije. Nakon predavanja održat će se kratka izlaganja istraživanja na kojima rade doktorski studenti i studenti diplomskog studija.

Raspored izlaganja

Research Class predavanja

14:00 **Milan Petrović**, „Investigating the influence of psychostimulants on the behavior of D. melanogaster: a comparison of interaction networks of experimental and control groups“

14:45 **Dino Pitoski**, „New principles for measuring node centrality using schedule-based space-time networks: example of freight ferry shipping in Europe“

Pauza

Kratke prezentacije istraživanja

15:40 **Anto Čabraja**, „Predicting outcome of Football match using Public Opinion and Machine Learning Techniques“

16:00 **Vlatka Davidović**, „Preliminary Report on Sequence-to-Sequence Neural Model for Croatian Abstractive Summarization“

16:20 **Andrea Hrelja**, „Analiza širenja poruka na Twiteru“

16:40 **Andrija Poleksić**, „Twitter analiza na temu Rusko - Ukrajinskog rata“

17:00 **Armin Krivičić,** „Analiza Reddita o ratu u Ukrajini“

Sažeci Research Class predavanja

Investigating the influence of psychostimulants on the behavior of D. melanogaster: a comparison of interaction networks of experimental and control groups

Milan Petrović, University of Rijeka, Faculty for Informatics and Digital technologies; Center for Artificial Intelligence and Cybersecurity

Abstract. Drosophila melanogaster, is a widely used model organism in biomedical research. It has been successfully used to study a number of human diseases, including addiction. In this research D. melanogaster is used to investigate the influence of psychostimulants on measures and dynamics in social interaction networks (SINs) before and after psychostimulant administration. Two populations of adult male fruit flies were used for the study: one that consumed a psychostimulant and the other that served as a control. Behavior was analyzed in two ways: static and dynamic. The static analysis focuses on the local, middle and global levels of the network, i.e., the individual fly, the communities in the network, and the network as a whole. The second analysis focuses on the dynamics of the network and analyzes the times of edge formation between individuals. The results of this study provide a deeper insight into the SINs of D. melanogaster and how psychostimulants affect them.

New principles for measuring node centrality using schedule-based space-time networks: example of freight ferry shipping in Europe

Dino Pitoski, PhD, YUFE Postdoc at The Center for Artificial Intelligence and Cybersecurity, University of Rijeka

Abstract. Node centrality is one of the most frequently revisited network theoretical concepts, which has obtained many calculation alternatives, stemming from different real-world or theoretical-model network abstractions. Majority of these measures were conceived on static network abstractions, or the so-called ``snapshot'' networks, which arguably are less realistic than dynamic (temporal) abstractions. An advanced dynamic node centrality measure that we propose in this article, is envisaged on a relatively uncommon network abstraction, of a space-time network derived from service schedules (timetables). The proposed centality measure has been designed to rank nodes based on their spread potential and has been implemented on the dynamic network of European sea ferry transportation for the month of August 2015. The essential feature of the Spread Potential proposed is the evaluation of the potential of a node in the network for transmitting disease, rumours, fake news, and other items, wherever a space-time network through which the transmission takes place can be abstracted from regular and scheduled services with known carrying capacities; as, for instance, transportation networks as those empirically assessed in the article, networks abstracted from medical (hospital) services schedules, educational (teaching) services, and virtually any other scheduled network. The perspectives regarding the generalization towards the non-scheduled space-time networks is to be discussed at this research class, along with the potential replications to other SemTech Lab research cases.