XUEMING XU

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EDUCATION

Shanghai Jiao Tong University *August 2021*
Bachelor of Science in Electrical & Computer Engineering *Cumulative GPA: 3.75/4.0*

University of Michigan, Ann Arbor *May 2021*
Bachelor of Science in Computer Science Engineering *Cumulative GPA: 4.0/4.0*
Minor in Mathematics, LSA

RESEARCH EXPERIENCE

Anomaly Activity Detection in Continually Evolving Networks *August 2020 - Present*
GEMS Lab@Umich, lab directed by Prof. Danai Koutra

- Research goal is to detect anomaly activities, especially subtle and bursty activities in continually evolving networks by their occurrence timeline
- Extended the notion of temporal motifs to capture activity among specific nodes, in what we called activity snippets, were small sequences of edge-updates that reoccur
- Mathematically formulated subtle activity and bursty activity by frequency and persistence
- Designed new similarity measure between two activities' occurrence timelines based on Dynamic Time Warping distance to find the nearest neighbors of synthetic or human-labeled subtle/bursty activities
- Implemented various anomaly detection algorithms finding anomaly activities based on occurrence timeline features including coverage over interval, regularity of occurrence and frequency.
- Developed online algorithms detecting potential anomaly activities in the streaming networks

Understanding Alumni Engagement *August 2020 - Present*
LIT Lab@Umich, lab directed by Prof. Rada Mihalcea

- The primary goal is to understand factors behind alumni's donation and engagement with newsletter emails
- Integrated alumni's profiles, click records on engagement emails, and donation records into a graph and generated node embeddings by node2vec algorithm, which were used to predict donation link
- Trained a logistic regression classifier, predicting whether some alumni will donate to some fund based on the semantic features of the fund description and email texts associated with the links that the alumni click on, with 84% accuracy on the balanced test dataset

Unsupervised Medical Timeline Summarization *September 2020 - December 2020*
EECS 598-017 Seminar Course@Umich, course directed by Prof. Lu Wang

- The objective is to summarize self-reported, noisy but rich medical histories in subreddit r/bipolar2 into structured and descriptive medical timelines
- Implemented a rule-based algorithm tagging each sentence in reddit posts with a time interval and clustered sentences with overlapping time intervals
- Devised an unsupervised encoder-decoder based neural model generating text summary of medical conditions in each time interval

Factors Behind Intentional Personal Change *February 2020 - June 2020*
LIT Lab@Umich, lab directed by Prof. Rada Mihalcea

- Research goal is to explore how we can computationally model change-seeking behavior and distinguish between those who maintain interest in personal change and those who don't
- Proposed a new dataset crawled from Reddit consisting of the writings of people who menifest intention to change, some of whom persistent but others do not

- Explored people's interests before they seek for personal change and their motivations for personal change by LDA topic modeling and LIWC lexicon analysis on their writings from different time periods
- Trained a classifier predicting whether people have persistent interest in personal change based on semantic features of their writings at different time periods and their activities on Reddit
- Second author submission at ACM CSCW'21: *Room to Grow: Understanding Factors Behind Intentional Change Using Social Media* (under review)

COURSE PROJECTS

Graph Attention Based Reasoning for Natural Language Inference *Fall 2020*
Natural Language Processing(Graduate)/EECS 595, advised by Prof. Joyce Chai

- Used Graph Attention Networks to exploit knowledge graphs from multiple sources, and developed a graph-based reasoning framework to perform NLI tasks like Question Answering, Conversation Entailment and Plausible Inference

Instagram Web Development *Winter 2020*
Web Systems/EECS 485, advised by Prof. John Kloosterman

- Built a client-side dynamic Instagram-clone web application achieving most functions of real Instagram

EXTRACURRICULAR ACTIVITIES

SK Sunny Young Volunteer Group *March 2018 - March 2019*

- Arranged workshop series on environmental protection for the children
- Organized smart phone use workshop series for the elder
- Was certificated as "Outstanding Volunteer"

AWARDS & HONOURS

Roger King Scholarship, *UMich* *August 2020*
University Honors, *UMich* *April 2020*
University Honors, *UMich* *December 2019*
Dean's List, *UMich* *December 2019*
Bronze Medal Winner in the 2018 University Physics Competition *November 2018*
Undergraduate Excellent Scholarship(10%), *SJTU* *November 2018*
John Wu&Jane Sun Talent Scholarship, *SJTU* *September 2017*

SKILLS

Languages Chinese, English
Programming Python, C++, Java, Javascript, HTML, CSS, Matlab, Bash