



# BIOINFORMATICS SEMINAR

## ILYA SAFRO

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### TEXT MINING FOR SCIENTIFIC DISCOVERY

Biomedical research often requires stakeholders make large investments long before experimental results support or reject their intuitions. Pfizer, for example, discarded its entire Alzheimer's portfolio in early 2018 when initial candidates failed testing, resulting in billions lost and about 300 layoffs. AI systems to facilitate and accelerate scientific hypothesis generation process is one of the solutions. We address this problem by constructing a large network representing previously published connections in biomedical papers and other data sources, and from that structure we uncover implicitly associated entities that have yet to be explicitly referenced. Our system can aid scientists by providing early insight on potential research directions, and has already been used in a laboratory setting to help discover a new gene-treatment option. This talk provides a background on text mining methods, outlines the systems, MOLIERE and AGATHA, and focuses on our work exploring automated analysis, validation, and the effect of input quality on output results.

### BIOGRAPHY

Dr. Ilya Safro is an associate professor in the Department of Computer and Information Sciences at the University of Delaware. He received his Ph.D. from the Weizmann Institute of Science (Israel) under supervision of Achi Brandt and Dorit Ron, in 2008. In Fall 2012, he joined the School of Computing at Clemson University. Safro was also a Faculty Scholar of the Clemson University School of Health Research. Before that he was at the Division of Mathematics and Computer Science at Argonne National Laboratory. His undergraduate school is Ben-Gurion University of the Negev.



## CBCB SEMINAR

11/8/2021

3:30-4:30PM

AP BioPharma

Room 140

(590 Avenue 1743)

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