

# FID3018 - Opposition Report

## Opposition to Ahmed Emad's presentation

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## 1 Summary

The seminar introduced the topic of heterogeneous graph representation learning, presenting three relevant papers in the area. The seminar was interesting and insightful, with the presenter providing his own takes on the pros and cons of each paper discussed.

## 2 Choice of Papers

The following three papers were presented:

1. Fu T. et al., *HIN2Vec: Explore Meta-paths in Heterogeneous Information Networks for Representation Learning*, CIKM 2017
2. Wang X. et al., *Heterogeneous Graph Attention Network*, WWW 2019
3. Yang C. et al., *MultiSage: Empowering GCN with Contextualized Multi-Embeddings on Web-Scale Multipartite Networks*, KDD 2020

The choice of papers is very sound, showcasing radically different architectures published over several years to tackle the same basic task, that is, obtaining useful node embeddings from heterogeneous graphs.

The topic is very relevant, given the importance and prevalence of heterogeneous graph-structured data collected by modern big data architectures. It is also well-suited to the audience, most of which has some background in graph representation learning, as the sub-topic of heterogeneous graphs is unfortunately not as well-known, with most of the high-profile papers only dealing with homogeneous graphs.

## 3 Presentation

The presentation was very well-structured, following the same flow for each paper and therefore allowing the audience to easily draw comparisons and understand similarities

and differences across the approaches. The inclusion of the personal takes of the presenter, pertaining to the pros, cons, similarities and differences of the approaches, were very appreciated. These takes provided key insights that would otherwise be missed by those listeners who did not have time to read the papers and familiarize with the topic and the datasets.

However, the presentation also had some pitfalls. First, the discussion of the third paper was more limited compared to the others. It would have been interesting to have some more takes on this quite different approach. Second, both the presentation and the follow-up discussion seemed a bit vague in certain points, with a noticeable lack of certain low-level details. It was probably the intention of the presenter to keep the seminar simpler on the technical level and therefore accessible to a wider audience. However, given the presence of several listeners with experience in the field, a slightly more rigorous technical discussion would probably have been appreciated.