MONTHLY REPORT - NOV 2016

1. Research activities in October.
2. Research plan in November.

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1 Research activities in October

	TOWARD MASTER THESIS	WSDM CUP 2017
TOPIC	Submodularity and random processes in network.	Vandalism detection and knowledge graph.
IDEA	Determinantal Point Processes (DPPs) and its estimation using simple submodular functions on sets of nodes or edges are an interesting research field. DPPs can be used as a effective initialization technique for non-convex MLE problems. On the other hand, submodularity functions on edges of a graph can be used to define a novel community detection criteria in addition to existing techniques (spectral clustering, modularity, ...).	Detect vandalism in Wikidata by neural random forest, or train a specialized neural network to detect edge-case vandalism output by the traditional random forest model. For triple scoring, I mined the Google's rank score for each person's name using Google Knowledge Graph API. By using the aforementioned Google's score and the similarity score learned by Skipgram model from Wikidata's text corpus, we train a simple feed-forward neural network to classify the popularity of each name-job or name-country on a scale of 0 to 7.
ACTIVITIES	For the submodularity and determinantal point processes, I am still in the literature research phrase. I also have received the review for the "Motif-Aware Graph Embedding" paper. I am rewriting the paper as suggested by the reviewers.	I have assembled a team of 4 to participate in WSDM Cup 2017. This year WSDM Cup 2017 consists of 2 task: Vandalism detection on Wikidata and Triple scoring. Details are given in the reference.

2 Research plan in November

	NOVEMBER - 2016
TOPIC	Rare event detection, knowledge graph, and submodular models on graph.
PLAN	About the WSDM Cup 2017, we will finalize our approach and create a prototype for submission by the end of November. About my research, by the end of November, I will have substantial knowledge about random processes on graph and write a literature review.