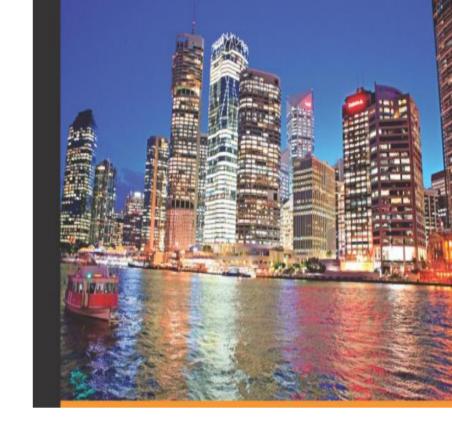# WEEKLY PROGRESS REPORT

Week 3& 4

Directed Research Projects

Zohaib Ahmad & Waleed Irfan

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Immediate Supervisor : Dr. Safaa Bedawi
Assistant : Professor Sukhjit Singh Sehra

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Weekly Report 3 & 4

DIRECTED PROJECTS

Student Names : Zohaib Ahmad & Waleed Irfan
Department: Computer Science (Honors)
Date: Feburary 21 2021
Immediate Supervisor: Dr. Safaa Bedawi
Assistant : Professor Sukhjit Singh Sehra

TASK	STATUS	DURATION
Implementing LSI Reading Research Papers		2 weeks

WORK DONE		
LSI Algorithm applied Reading research papers completed		

Student ID : 170902110 & 170406830

Research Findings

LSA and LDA along with All Applications Explained

LSA or Latent Semantic Analysis is a technique in the NLP, in particular distributional semantics, of analyzing relationships between a set of documents and the terms they contain by producing a set of concepts related to the documents and terms. LDA or Latent Dirichlet Allocation again, in NLP is a generative statistical model that allows sets of observations to be explained by unobserved groups that explain why some parts of the data are similar. Both LSA and LDA have their similarities and differences. For instance, both LSA and LDA use a similar input approach of "Bag of Words" in a matrix format. The difference between the two is that LSA focuses more on matrix reduction, whereas LDA focuses more on solving the actual model. In a research paper regarding LSA with OpenStreetMap provided by Prof. Sukhjit, it is explains in great detail how this analysis provides a methodology for automatically organizing, understanding, searching and summarizing a textual dataset. It examines the relationship between documents and terms in the dataset to reveal concepts. It is an unsupervised text-mining approach that uses Singular Vector Decomposition (SVD) to create a low-dimensional space for finding relationships, revealing topics and comparing documents. Similarly, in another research article based on LDA regarding Software Effort Estimate. The goal for this paper was to identify any existing patterns in the acquired dataset through the use of NLP. This method was applied on roughly 1200 documents. What this analysis can assist in is that it can identify strong areas of research with great potential.

Citations

Sehra, S., Brar, Y., Kaur, N., & Sehra, S. (2017, June 10). Research patterns and trends in software effort estimation. Retrieved February 17, 2021, from https://www.sciencedirect.com/science/article/abs/pii/S0950584917304317

Sehra, S., Singh, J., & Rai, H. (2017, July 01). Using latent semantic analysis to identify research trends in openstreetmap. Retrieved February 16, 2021, from https://www.mdpi.com/2220-9964/6/7/195