香港浸會大學
HONG KONG BAPTIST UNIVERSITY

DEPARTMENT OF
COMPUTER SCIENCE
計算機科學系

TMLR Young Scientist SEMINAR

2022 SERIES

Trustworthy Machine Learning and Reasoning Group

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Date: 04 August 2022 (Thursday)
Time: 16:00 – 17:00 (HKT)
Zoom: https://hkbu.zoom.us/j/6603117755

Learning Backward Compatible Embeddings

ABSTRACT

Embeddings, low-dimensional vector representation of objects, are fundamental in building modern machine learning systems. In industrial settings, there is usually an embedding team that trains an embedding model to solve intended tasks (e.g., product recommendation). The produced embeddings are then widely consumed by consumer teams to solve their unintended tasks (e.g., fraud detection). However, as the embedding model gets updated and retrained to improve performance on the intended task, the newly-generated embeddings are no longer compatible with the existing consumer models. Here we study the problem of embedding version updates and their backward compatibility. We formalize the problem where the goal is for the embedding team to keep updating the embedding version, while the consumer teams do not have to retrain their models. We develop a solution based on learning backward compatible embeddings, which allows the embedding model version to be updated frequently, while also allowing the latest version of the embedding to be quickly transformed into any backward compatible historical version of it, so that consumer teams do not have to retrain their models. We explore different design choices under our framework and show effectiveness of our approach.

BIOGRAPHY

Weihua Hu is a Ph.D. student of Computer Science at Stanford University, advised by Jure Leskovec. His research interests lie in graph representation learning and its applications to scientific discovery. His recent research is on advancing the field of Graph Neural Networks, by improving their theoretical understanding and generalization capability as well as building large-scale datasets for benchmarking models. He also actively applies his research to drug discovery and recommender systems. He is supported by Funai Overseas Scholarship and Masason Foundation Fellowship.

ENQUIRY

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