

# NATIONAL UNIVERSITY OF SINGAPORE

School of Computing

## PH.D DEFENCE - PUBLIC SEMINAR

**Title:**        **Mobile App Recommendation**

Speaker:     Mr Lin Tingji, Jovian

Date/Time:   17 September 2014, Wednesday, 11:00 AM to 12:30 PM

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### Abstract:

Mobile apps have become commonplace in society. But with millions of apps flooding the app stores, recommender systems have become indispensable tools as they help consumers overcome the problem of information overload. By sifting through the ocean of apps, they allow consumers to discover new and compelling apps through personalized recommendations. Yet, conventional recommender systems have their own set of problems ? particularly the problem of data sparsity, which is the result of insufficient ratings per app. Furthermore, conventional recommender systems do not account for the singularity of the app domain that, if properly utilized, could potentially provide significant improvements to current app recommender systems.

In this thesis, we investigate the singularity of the app domain for the purpose of improving app recommendations. By exploiting the app domain's unique characteristics, we come up with novel recommendation techniques that take advantage of information from social networks, version updates, and a slew of app metadata that is typically underused.

First, we describe an approach that accounts for nascent information culled from Twitter to provide relevant recommendations in cold-start situations. By exploiting an app's Twitter handle (e.g., @angrybirds), we extract its Twitter-followers and show how these Twitter-followers can act as an alternative source of information to overcome the cold-start problem.

Second, we observe that in the domain of mobile apps, a version update may provide substantial changes to an app, which may revive a consumer's interest for a previously unappealing version. We leverage version features for the purpose of improving app recommendations, and show that incorporating version information into conventional techniques significantly improves the recommendation quality.

Finally, given a diverse set of app recommendation techniques, we propose a unifying

framework that marries the strengths of the various individual techniques while overcoming their respective weaknesses. We present a hybrid app recommender system that utilizes both conventional and novel app recommendation techniques ? as well as the assimilation of user and app metadata features ? for the purpose of generating a personalized ranked list of recommended apps.