FROM SOCIAL BIG DATA TO PERSONALIZED RECOMMENDATIONS: A SEMANTIC APPROACH

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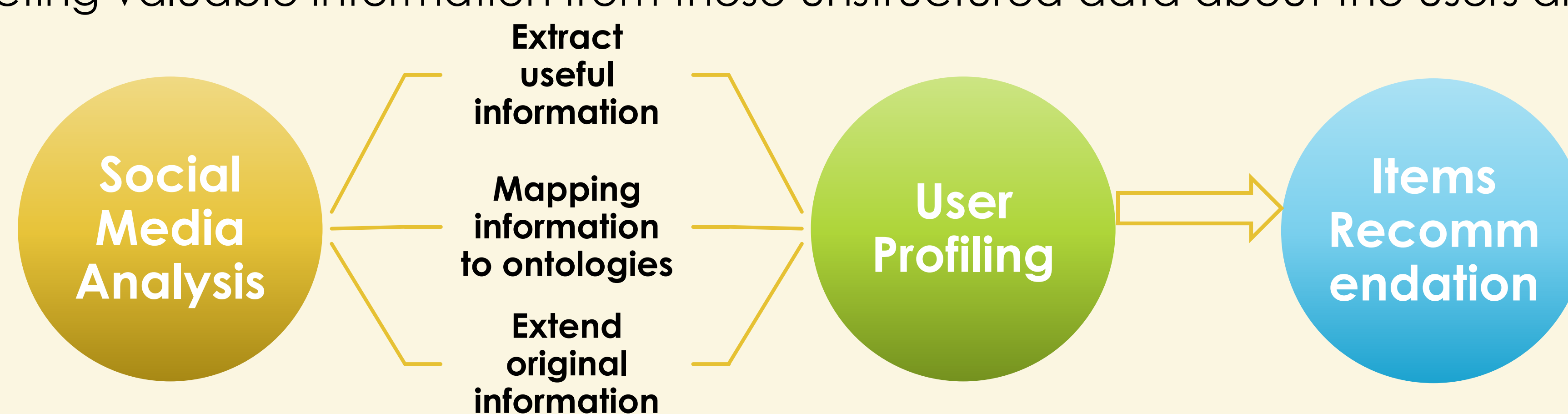PhD Program on Information and Communications Technology, University of Vigo, Spain

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Motivation of the Work

Social media is one of the most representative and relevant data sources for big data. Social media data generate from a wide number of Internet applications and websites, with some of the most popular being Facebook, Twitter, LinkedIn, YouTube, Instagram, etc.

Every day users contribute with abundant information in their social networks about their opinions, likings, or interests. This information can contribute in many application domains such as, health, education, tourism, e-business, etc.
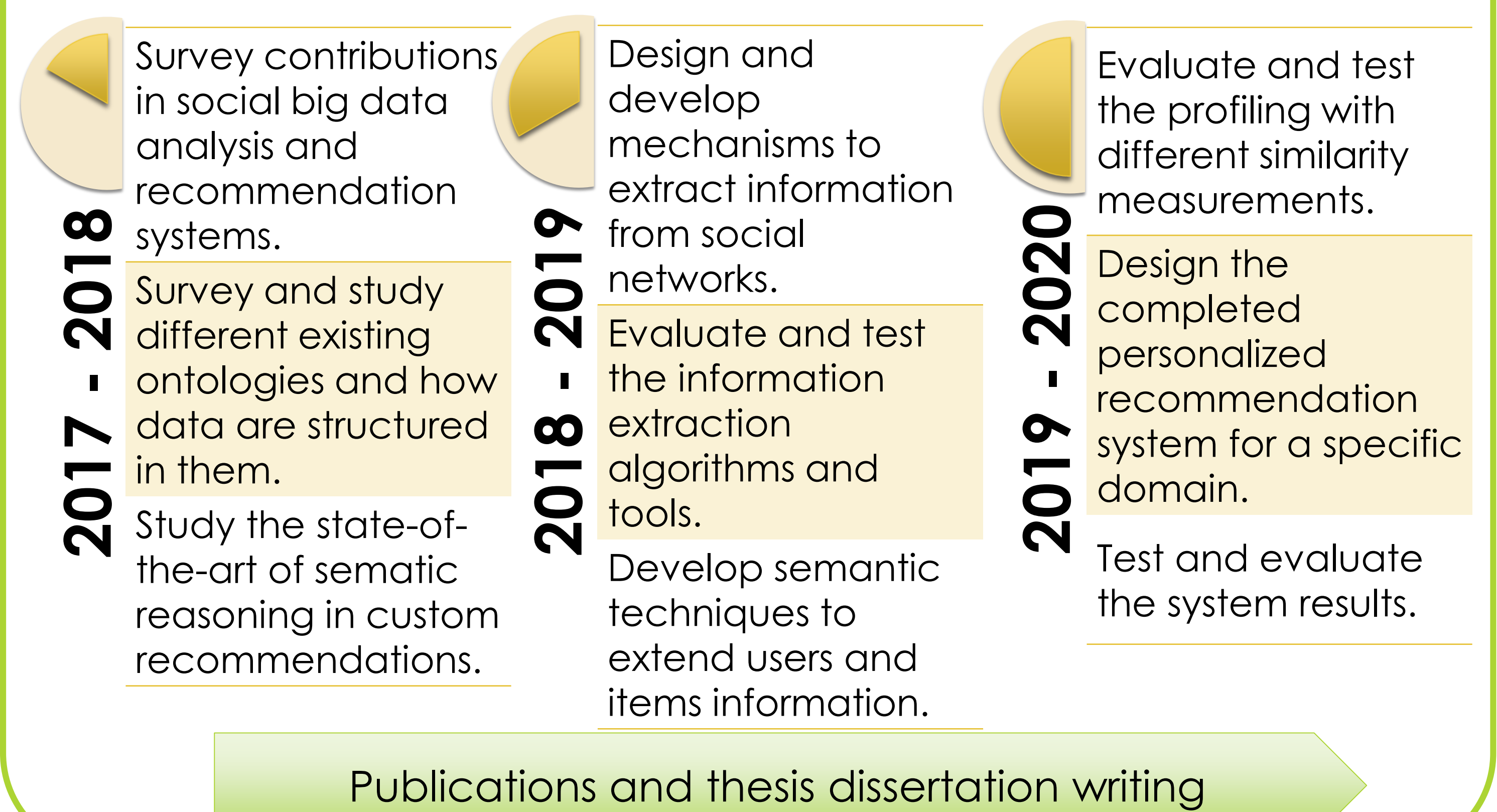
Nowadays, one of the challenges of the state-of-the-art is using such information to build automatically user profiling without bothering users with their participation in this. The starting idea is that recommender systems behavior can be improved by extracting valuable information from these unstructured data about the users and the items to recommend.

Social Media Analysis
- Extract useful information
- Mapping information to ontologies
- Extend original information

→ **User Profiling** → **Items Recommendation**

Thesis Objectives

- Contribute in the analysis of social big data and the identification of relevant unstructured information that could be extracted automatically

- Study and the evaluation of domain ontologies

- Design of semantic techniques to discover additional attractors for users in order to build enhanced user profiles and also extend initial information about items recommendations

- Use semantic reasoning to find useful relationships between well-known social networks information and the customized predictions

- Implement tools to test the results in specific domains

Research Plan

2017 - 2018
Survey contributions in social big data analysis and recommendation systems.

Survey and study different existing ontologies and how data are structured in them.

Study the state-of-the-art of sematic reasoning in custom recommendations.

2018 - 2019
Design and develop mechanisms to extract information from social networks.

Evaluate and test the information extraction algorithms and tools.

Develop semantic techniques to extend users and items information.

2019 - 2020
Evaluate and test the profiling with different similarity measurements.

Design the completed personalized recommendation system for a specific domain.

Test and evaluate the system results.

Publications and thesis dissertation writing

Next Year Planning

- Study the state of the art of sematic reasoning in custom recommendations

- Design and develop mechanisms to extract information from social networks

- Evaluate and test the information extraction algorithms and tools

- Develop semantic techniques to extend users and items information

- Development of the user profiling and item recommendations

References

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