

LUD Info Session

Shangbin Feng

Director, LUD Lab, Xi'an Jiaotong University

wind_binteng@stu.xjtu.edu.cn

January 12, 2022

What is the LUD Lab?

- Luo lab **U**ndergraduate **D**ivision
- the premiere undergraduate research group @ XJTU
- 12 active members
 - 5 seniors + 7 juniors
- 7 active projects
- Top-notch publications
 - Published: [CIKM'21 a], [CIKM'21 b], [ASONAM'21], [AAAI'22]
 - Submission: [ICML'22], [KDD'22], [NAACL'22], [IJCAI'22 a], [IJCAI'22 b]

Our Research Interests

- Social Network Analysis
- Graph Neural Networks
- Natural Language Processing
- Knowledge Graphs
- (Computer Vision)

#1 Social Network Analysis

- Twitter bot detection
 - Bot disguise
 - Bot evolution
 - Bot communities
 - ...

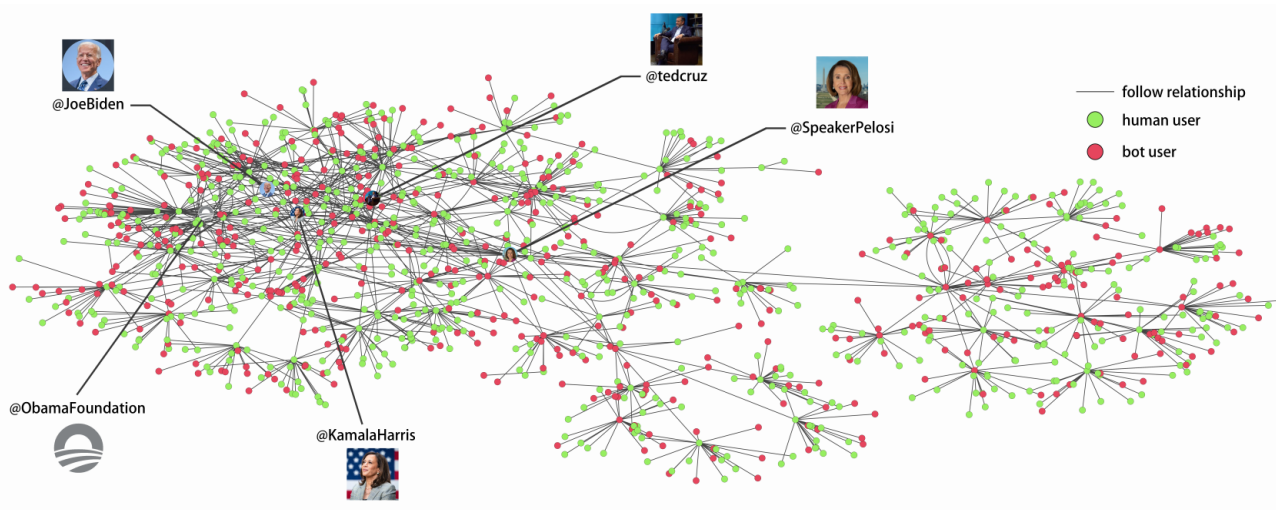
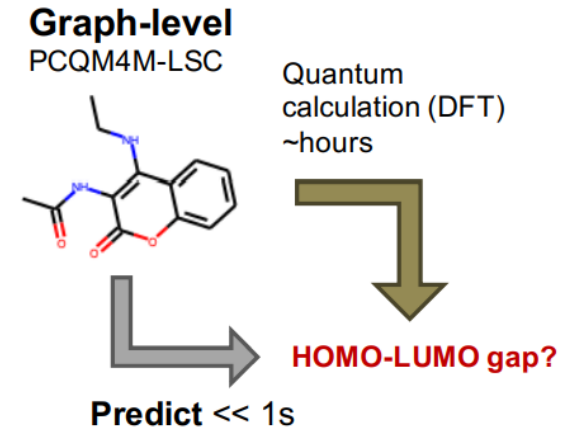
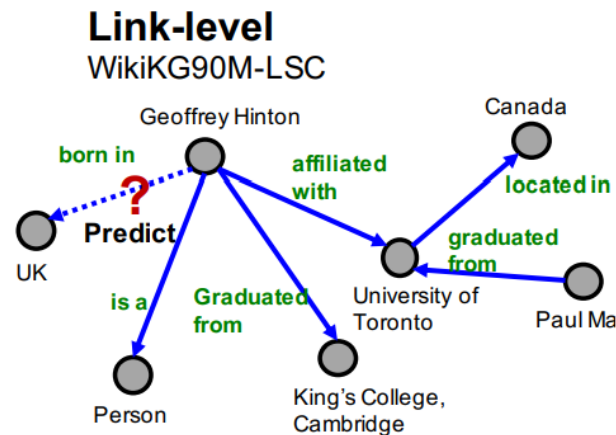
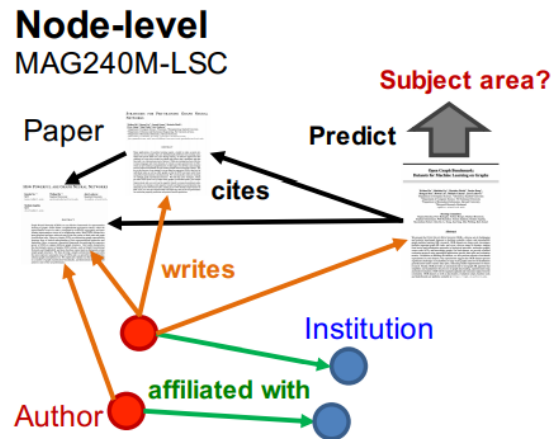


Figure 1: Illustration of a user cluster in TwiBot-20 with *@SpeakerPelosi* as the seed user. Green nodes represent human users in the user cluster, red nodes represent bot users and edges in the graph indicates that one user follows the other.



#2 Graph Neural Networks

- Deep learning for structured data
 - Few-shot?
 - Dynamic?
 - Anomaly detection?
 - Distributed?



#3 Natural Language Processing

Big Oak Tree State Park is a state - owned nature preserve ... in the Mississippi Alluvial Plain portion of the **Gulf Coastal Plain**.

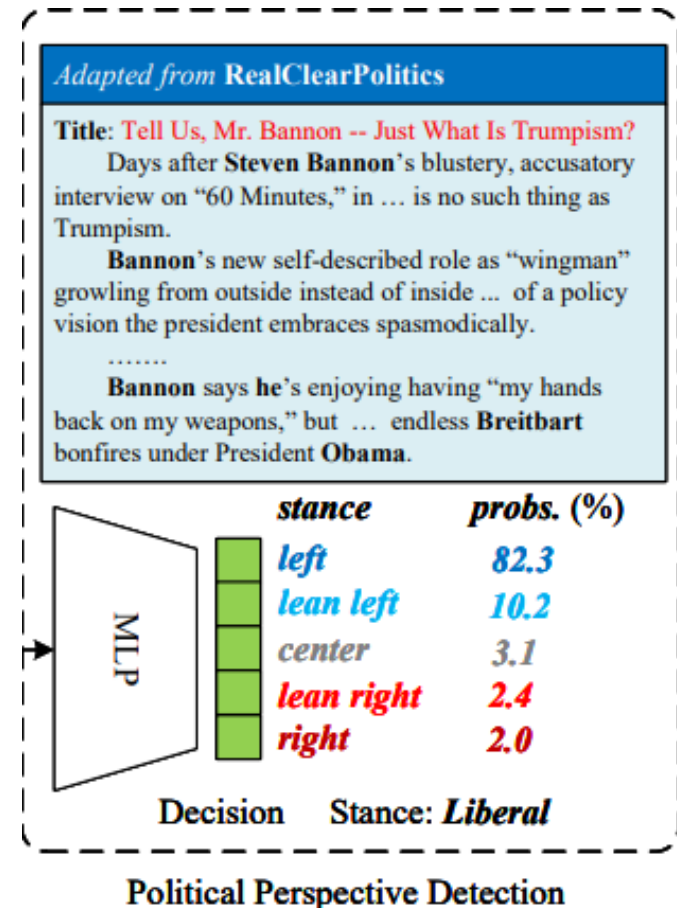
The **Gulf Coastal Plain** extends around the Gulf of Mexico in the **Southern United States**...

The **Southern United States**, commonly referred to as the American South, Dixie, or simply the South, is a region of the **United States of America**.

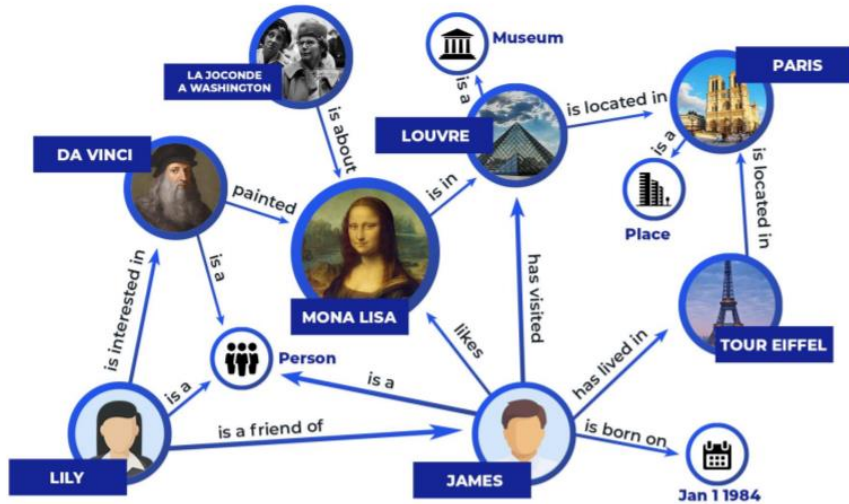
Q: (Big Oak Tree State Park, located in, ?)

A: **United States of America**

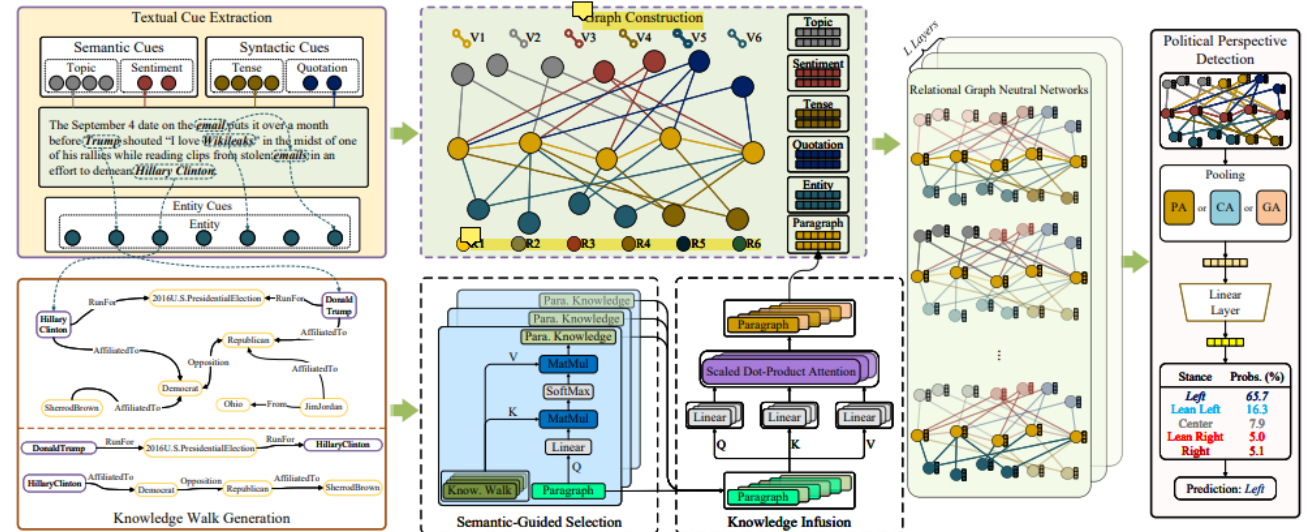
Open-domain Question Answering



#4 Knowledge Graphs



Knowledge Graph
Representation Learning

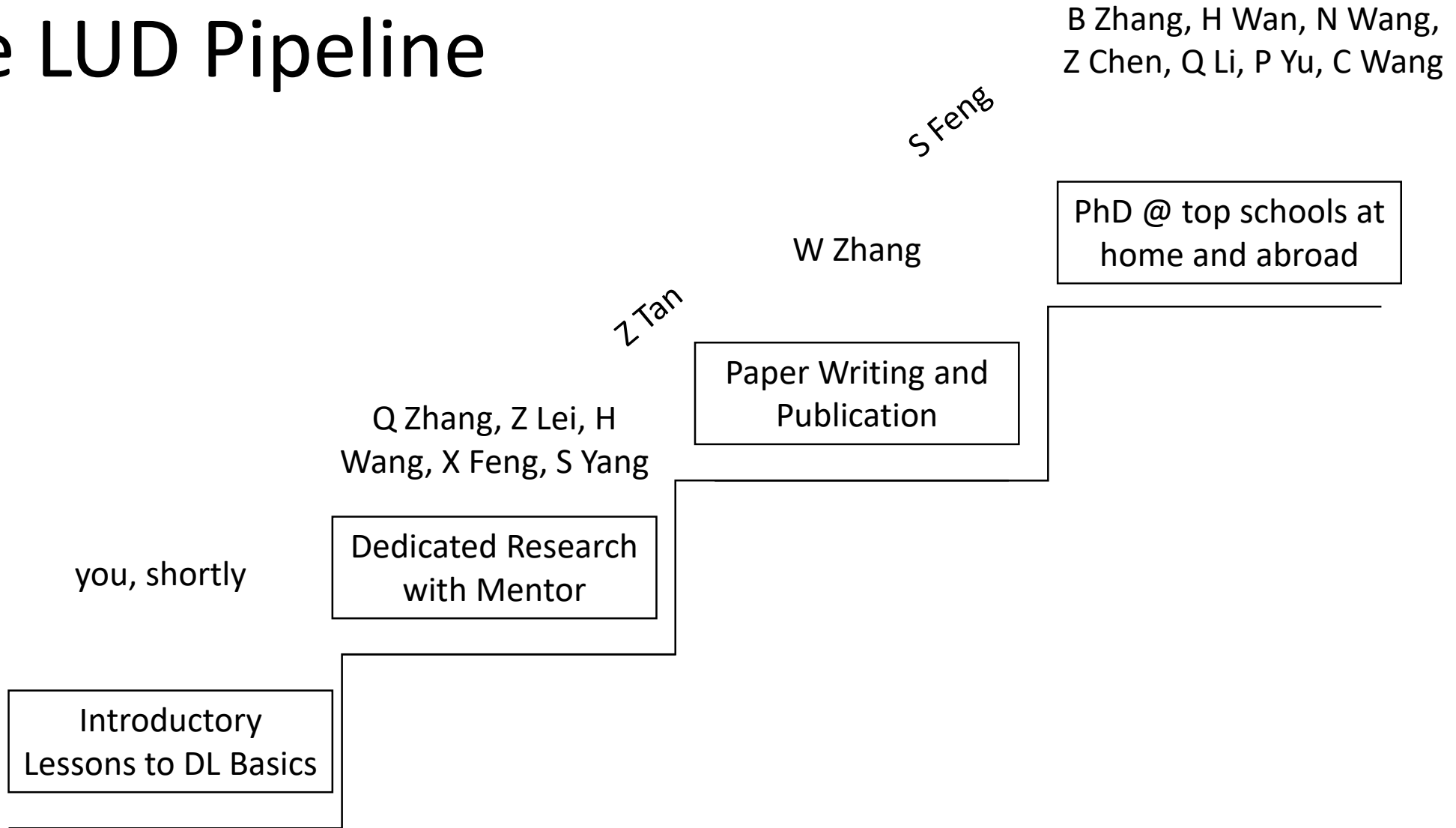


Knowledge-aware NLP

What can we offer?

- **Hardcore** research experience
- Academic skill set
 - Basic deep learning
 - Paper reading
 - Academic presentation
 - Academic English
 - Paper writing & submission
- Professional network
- Pathway to top PhD programs at home and abroad

The LUD Pipeline



#1 Introductory Lectures

- #0 python basics
- #1 machine learning basics
- #2 deep learning and pytorch basics
- Project 1: pytorch practice
- #3 NLP basics
- #4 GNN basics
- Project 2: CORA node classification
- #5 NLP advanced
- #6 GNN advanced
- Project 3: BotRGCN Reproduction
- #7 Knowledge Graph
- #8 Computer Vision
- #9 Miscellaneous
- Project 4: Final Project

#2 Paper-oriented Research

After passing the introductory lectures and projects,

Project	Who	Mentor	Status
Stance detection	张文千	冯尚彬	NAACL'22 to go
KG embedding	谭兆轩	陈子龙	KDD'22 to go
NAS on GNNs	冯新顺	万和润	Preliminary results
Few-shot on GNNs	张清越	张斌弛 & 陈子龙	Preliminary results
Open-domain QA	雷镇雨	陈子龙	In progress
Het. graph anomaly	杨舒杰	张斌弛	In progress
Fake news detection	王鸿瑞	王宁南 & 万和润	In progress

#4 Ph.D. Admissions

- What makes you stand out from the CROWD?
 - MCM/ICM?
 - Tiaozhan Bei? Tengfei Bei? Da Chuang?
 - ...
- U of Virginia, full scholarship [Binchi Zhang]
- Tsinghua University [Zilong Chen]
- Shanghai Jiaotong University [Qingyao Li]
- Chinese University of Hong Kong [Peisheng Yu]
- Xi'an Jiaotong University [Ningnan Wang, Herun Wan]
- Also, if you wish to join Minnan Luo's lab, you are at the right place.

However

- It is **very hard**, every step of the way
 - Time, intellectual ability, English, soundness, ...
- Not fitting for everyone
 - You could always withdraw during the introductory lectures
 - Last time ...
- The reward cycle is very long, sometimes even futile
 - Expect at least 6 months
- We do not have so much advising resources
 - 5 at most

How does it work exactly?

- Wenqian Zhang
 - First author of a NAACL'22 submission, top-notch NLP conference
- Zhaoxuan Tan
 - First author of a KDD'22 submission, top-notch data mining conference
- Qingyue Zhang
 - Few-shot learning on dynamic graphs, NSF grant proposal writer

Survey Time

- If you decide to help yourself,
- <https://forms.gle/X7oSmNWFmgeSANQBA>
- Due: 11:59 PM, today
 - Reach out in chat for any questions about the form
- Also, question time ...

Thank You

Shangbin Feng

Xi'an Jiaotong University

wind_binteng@stu.xjtu.edu.cn

January 12, 2021