Motivation

Numerous et al.

Twitter bot detection is an important task!

Yang et al. and others

We propose hand-crafted features.

Great, but feature-based approaches could not adapt to bot evolution.

Kudugunta et al. and others

We use RNN, GAN and other DL techniques.

Great, but individual analysis could not capture novel bot communities.

GraphHist and others

How about graph-based approaches?

Combining with inherent Twitter heterogeneities?

Relational Graph Transformers

We propose relational graph transformers, a novel GNN architecture, which

- Split HINs into relational sub-graphs, learn relation-specific representations and aggregates with semantic attention networks.

- Model relation and influence heterogeneities with relational sub-graphs and graph transformers.

Experiments and Results

We propose relational graph transformers, a novel GNN architecture, which

- Split HINs into relational sub-graphs, learn relation-specific representations and aggregates with semantic attention networks.

- Model relation and influence heterogeneities with relational sub-graphs and graph transformers.

Our relational graph transformers outperform feature, DL and graph-based Twitter bot detection baselines on a comprehensive benchmark TwiBot-20.

- Ablation study examining relational graph transformers.

- Case study of correlation: botness and heterogeneities.

- Our approach learns great representations for users.