

Cyberbullying Networks

Analyzing User Roles and Interactions on Instagram

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Motivation

- Use network analysis to identify interaction patterns in 414 cyberbullying sessions on Instagram
- Directed networks capture the relationships between victims, bullies, and defenders
- Visualize interactions and perform statistical analysis to aid cyberbullying detection

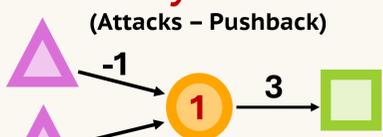
User Roles



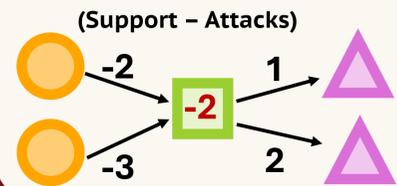
Data

- 2013 – 2015
- 414 sessions and 35,364 comments
- Collected by Hosseinmardi et al.

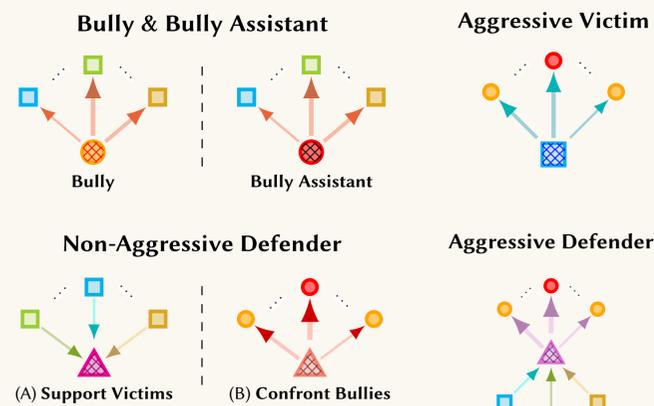
Bully Score



Victim Score



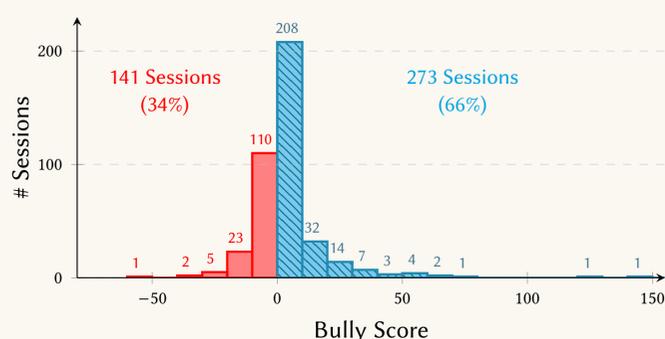
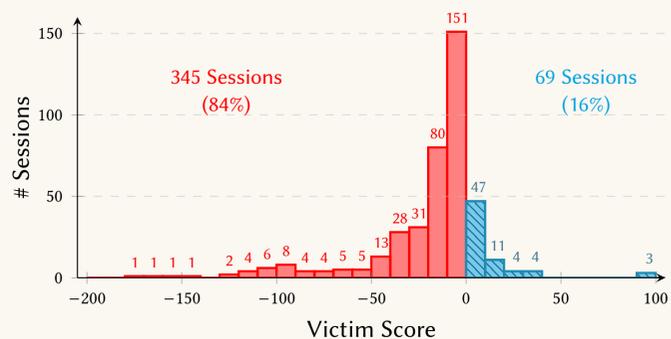
Edge Construction Process



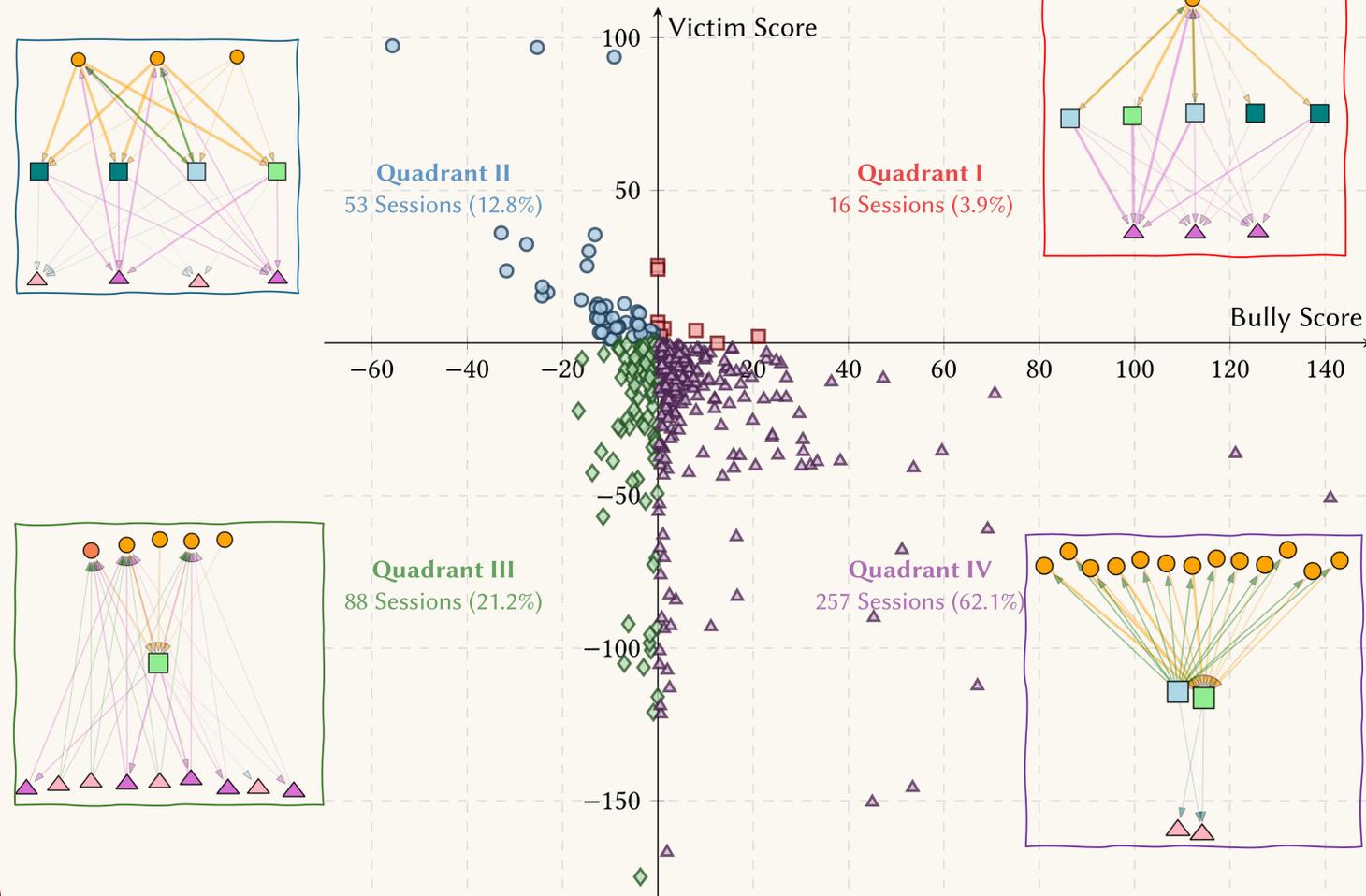
Main Takeaways

- Bullies dominate interactions in most sessions
- Bullies face pushback from defenders and victims
- Victims rarely overpower bullies

Score Distributions



Joint Score Distribution



Future Work

- Development of null models
- Train ML models to predict roles in unannotated sessions
- Analyze role dynamics within and across sessions
- Create a temporal evolution of bully and victim scores across quarters

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Network Analysis of Cyberbullying Interactions on Instagram (Preprint)