

# Lynnette Hui Xian Ng

PhD Candidate, Knight Fellow  
Carnegie Mellon University, Societal Computing

✉ [lynnetteng@cmu.edu](mailto:lynnetteng@cmu.edu)  
🌐 [quarbby.github.io](https://quarbby.github.io)

## RESEARCH INTERESTS

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My research focuses on the **detection, analysis and modeling of information dissemination techniques** of **Cyber Social Agents (CSAs)** in social media spheres. I am interested in the **social impact (network, narrative and engagement) of CSAs**, particularly modeling and predicting their behavior for **persuasion in online communities**. I work in the intersection of machine learning, network analysis, information systems and multimodal (image and text) analysis. Thesis Proposal: "Bot-Human Nexus on Social Media", 28 September 2023, Advisor: Prof. Kathleen Carley. (<https://quarbby.github.io/blog/thesisproposal.html>)

## EDUCATION

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**Carnegie Mellon University**, 2021-Present  
PhD in Societal Computing, School of Computer Science

**National University of Singapore**, 2013-2016  
Bachelors in Computing (Computer Science). Second Upper Class with Honors (2:1)  
NUSS Medal for Outstanding Achievement

## SELECTED PUBLICATIONS

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**A global comparison of social media bot and human characteristics.** 2025. Scientific Reports  
*Lynnette Hui Xian Ng, Kathleen M. Carley*

**Moral and emotional influences on attitude stability towards COVID-19 vaccines on social media.** 2024. Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation  
Samantha C. Phillips, *Lynnette Hui Xian Ng*, Wenqi Zhou, Kathleen M. Carley  
\*Best Paper Award (Runner-Up)\*

**Tiny-BotBuster: Identifying Automated Political Coordination in Digital Campaigns.** 2024. Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation  
*Lynnette Hui Xian Ng, Mihovil Bartulovic, Kathleen M. Carley*  
\*Presented to Singapor Ministry of Defence Communication Organization\*

**Deflating the Chinese Balloon: types of Twitter bots in US-China balloon incident.** 2023. EPJ Data Science  
*Lynnette Hui Xian Ng, Kathleen M. Carley*  
\*Featured in New Scientist and Reddit\*

**A Combined Synchronization Index for Evaluating Collective Action on Social Media.** 2023. Applied Network Science  
*Lynnette Hui Xian Ng, Kathleen M. Carley*  
\*Algorithm integrated in ORA Network Analysis Software\*

**BotBuster: Multi-platform bot detection using a mixture of experts** 2023. International AAAI Conference on Web and Social Media  
*Lynnette Hui Xian Ng, Kathleen M. Carley*

**Is my stance the same as your stance? A cross validation study of stance detection datasets.** 2022. Information Processing & Management  
*Lynnette Hui Xian Ng, Kathleen M. Carley*  
\*Best PhD Student Paper\*

**Cross-platform information spread during the January 6th capitol riots** 2022. Social Network Analysis and Mining  
*Lynnette Hui Xian Ng, Iain J. Cruickshank, Kathleen M. Carley*

**Pro or anti? a social influence model of online stance flipping** 2022. IEEE Transactions on Network Science and Engineering.  
*Lynnette Hui Xian Ng, Kathleen M. Carley*

**Online coordination: methods and comparative case studies of coordinated groups across four events in the united states** 2022. ACM Web Science Conference  
*Lynnette Hui Xian Ng, Kathleen M. Carley*

**Stabilizing a supervised bot detection algorithm: How much data is needed for consistent predictions?** 2022. Online Social Networks and Media

*Lynnette Hui Xian Ng*, Dawn C. Robertson, Kathleen M. Carley

\*Best Paper Award 2024, Online Social Networks and Media\*

**Will you dance to the challenge? Predicting user participation of TikTok Challenges.** 2021. IEEE International Conference on Advances in Social Network Analysis and Mining.

*Lynnette Hui Xian Ng*, John Yeh Han Tan, Darryl Jing Heng Tan, Roy Ka Wei Lee

\*Featured in Input Magazine\*

**How does Fake News Spread? Understanding pathways of disinformation spread through APIs.** 2021. Policy & Internet

*Lynnette Hui Xian Ng*, Araz Taeihagh

\*Presented to Singapore Ministry of Communications and Information\*

\*Most Cited Paper Award 2021, Policy & Internet\*

**Bot Activity in the 2020 Singaporean Elections: A Social Cybersecurity Analysis.** 2020. International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction and Behavior Representation in Modeling and Simulation.

Joshua Uyheng, *Lynnette Hui Xian Ng*, Kathleen M. Carley

\*SBP-Brims Challenge Runner-Up. Presented to Singapore Ministry of Defense\*

## AWARDS AND FELLOWSHIPS

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**Best Paper**, Online Social Networks and Media for "Stabilizing a supervised bot detection algorithm: How much data is needed for consistent predictions?" , 2024

**Best Paper (Runner Up)**, SBP-Brims Conference for "Moral and emotional influences on attitude stability towards COVID-19 vaccines on social media", 2024

**Best Poster**, Grefenstette Center Tech Ethics Symposium for "Online Community: Are You Chatting with Bots", 2024

**Best PhD Student Paper**, Information Processing & Management, for "Is my stance the same as your stance? A cross validation study of stance detection datasets", 2022

**Most Cited Paper**, Policy & Internet, for "How does Fake News Spread? Understanding pathways of disinformation spread through APIs", 2021

**Challenge Runner-Up**, SBP-Brims conference, for "Bot Activity in 2020 Singaporean Elections: A Social Cybersecurity Analysis" 2020

**NUS Development Grant, National University of Singapore**, 2024

**Research Feature, IDEaS Center, Carnegie Mellon University**, 2024

**GuSH Grant, Carnegie Mellon University**, 2024

**ICWSM Travel Scholarship**, 2024

**Knight Fellow**, 2022-2024

**DSTA PostGraduate Fellowship**, 2021-2025

**DSTA Innovation Award**, 2018

**NUSS Medial for Outstanding Achievement**, 2016

**Best Final Year Project**, 2016

**Singapore Computer Society IT Youth Leader Award**, 2015

**Google Anita Borg Scholarship**, 2014

**DSTA Undergraduate Scholarship**, 2013-2016

**Fifth Position, RoboSub Autonomous Underwater Vehicle Competition**, 2014

**First Prize, Singapore Autonomous Underwater Vehicle Challenge**, 2014

## INVITED TALKS

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**Summer Institute in Computational Social Science @ CMU**, 2025

**CMU AI & Disinformation Summit**, "AI Bot Wars", 2025

**ICWSM Ambassador Lightning Talk**, "Automated Information Dissemination on Social Media", 2024

**NYU Center for Data Science Combatting Digital Misinformation Series.** Geopolitical Narratives of Social Media Bots, 2024

**ASTAR Center for Advanced Technology in Online Safety.** Information Manipulation by Social Media Bots through a Network Analysis View, 2024

**Online Trust and Safety Mitigation and Empowerment Workshop.** "Positive Online Experience", 2024

**CMU Summer Institute.** "Finding Bots" and "Finding Trolls". 2023-2024

**MCI Invited Talk.** "Understanding Misinformation". 2024

## PRESS FEATURES

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**d\*classified** Understanding Social Media Manipulation and Complex Networks: Insights from the Centre for Online Trust & Safety's July 2024 Seminar ft. Lynnette Ng and Dr. Feng Ling. 2024

**New Scientist** Armies of Bots Battled on Twitter over Chinese Spy Balloon Incident. 2024  
**DSTA PhD Scholar and Knight Scholar feature** Meet Lynnette Ng — our Societal Computing PhD scholar at Carnegie Mellon University. 2024  
**Reddit r/science trending** Armies of Bots Battled on Twitter Over Chinese. 2024  
**IDEaS Newsletter** Research Spotlight. 2024  
**CMU School of Computer Science** Standardized Data Set Annotations Could Aid in Detecting Social Media Sentiments. 2023  
**Input Magazine** Have researchers cracked the code to TikTok virality?

## TEACHING AND MENTORSHIP EXPERIENCE

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**Head Teaching Assistant, Dynamic Network Analysis.** 2025 Spring.  
**Teaching Assistant, Computational Modeling of Complex Socio-Technical SYstems.** 2024 Fall.  
**CMU IDEaS Lab Summer Institute.** 2021-2024. Annual two week intensive courses to teach data science, network science and social media concepts to students, industry and government attendees. Co-chair of the 2024 run, program committee and instructor of 2021-2023 runs.  
**Undergraduate mentorship, CMU.** Divyannash Singh. 2025. "Star Network Motifs on X in COVID-19" in SBP-BRIMS.  
**High School mentorship, CMU.** Anna Wu. 2024. Published "What News Is Shared Where and How: A Multi-Platform Analysis of News Shared During the 2022 US Midterm Elections" in Social Media + Society.  
**Masters mentorship, CMU.** Adya Danaditya. 2022. Published "From curious hashtags to polarized effect: profiling coordinated actions in indonesian twitter discourse" in Social Network Analysis and Mining. 2022.

## PROFESSIONAL EXPERIENCE

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**Senior Engineer, Singapore Science and Technology Agency.** 2017-2021.  
Development Lead, Information Research Laboratory. Led the design and implementation for an open-source multi-modal data intelligence system, analyzing ~700k records per hour. The system has been successfully fielded for simultaneous operations during national events such as the 2018 ASEAN summit.

## SERVICE

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### Organizing Committee

2025. CMU CASOS Summer Institute Scenario Design

2021-2024. CMU CASOS Summer Institute

### Program Committee

2026. AAAI

2025. ICWSM DeWeb Workshop

2023-2025. ICWSM CySoc Workshop

### Reviewer

AAAI ICWSM, Scientific Reports, PLOS One, EPJ Data Science, Social Network Analysis and Mining, Social Media + Society, Information Processing & Management, Information & Management

### Community Service

2025. CMU School of Computer Science Graduate Mascot. Featured in

<https://www.cs.cmu.edu/news/2025/mascots>

2022-2025. CMU School of Computer Science Graduate Ambassador. Featured on 2023 Christmas Card.