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Dr. Tuan Q. Phan is an Assistant Professor at the Department of Information Systems and Analytics at the National University of Singapore. His work in social networks and Big Data spans multiple disciplines including economics, marketing, consumer behavior, computer science, and statistics. His expertise covers various industries including retail and e-commerce, logistics and transportation, social media, news and video media, technology and consumer products, education, and FinTech. He received his doctorate from Harvard Business School, and an undergraduate from MIT. He is also an entrepreneur, and frequently consults industry leaders.

## **EDUCATION**

- 2011            **Harvard Business School, Boston, MA, USA**  
Doctor of Business Administration (DBA) in Marketing  
Committee: David Godes (chair), Markus Mobius, Edoardo Airoldi, Sunil Gupta
- 2002            **Massachusetts Institute of Technology, Cambridge, MA, USA**  
B.S. in Computer Science & Electrical Engineering, with  
concentrations in Business and Economics

## **ACADEMIC EMPLOYMENT**

- Aug. 2011 –    **National University of Singapore, Singapore**  
Present        Assistant Professor, Department of Information Systems and  
Analytics
- Sept. 2017 -    Director of Social Learning Research Theme  
Present        *Institute of Application of Learning Science and Educational  
Technology*
- 2010-2011      **Harvard University, Cambridge, USA**  
Research Assistant, Department of Statistics
- 2005-2011      **Harvard Business School, Boston, USA**  
Research Assistant, Marketing Department

## **PROFESSIONAL EXPERIENCE**

- 2011                    *Consultant, Senior Analyst*  
ChoiceStream Inc, Cambridge, MA
- 2003 - 2004        *Systems Analyst*  
Ticketmaster, Los Angeles, CA
- 2000 – 2004       *Co-Founder*  
Intergrafx, Cambridge, MA; Pasadena, CA; Taipei, Taiwan

## **RESEARCH AND SCHOLARLY ACTIVITIES**

### A. Research Interests

1. Social Networks, Digital Media, E-commerce, Computational Social Science
2. Big Data, Markov Chain Monte Carlo methods, econometrics, Numerical methods

### B. Journal Publications

1. **Phan, Tuan Q.**, and David Godes. “The Evolution of Influence Through Endogenous Link Formation.” *Marketing Science* (Forthcoming)
2. Chen, Xi, Ralf van der Lans, and **Tuan Q. Phan**. “Uncovering the Importance of Relationship Characteristics in Social Networks: Implications for Seeding Strategies.” *Journal of Marketing Research* 54, no. 2 (2017): 187–201. doi:[10.1509/jmr.12.0511](https://doi.org/10.1509/jmr.12.0511).
3. Cavusoglu, Huseyin, **Tuan Q. Phan**, Hasan Cavusoglu, and Edoardo M. Airoidi. “Assessing the Impact of Granular Privacy Controls on Content Sharing and Disclosure on Facebook.” *Information Systems Research* 27, no. 4 (2016): 848–879. doi:[10.1287/isre.2016.0672](https://doi.org/10.1287/isre.2016.0672).
4. **Phan, Tuan Q.**, and Edoardo M. Airoidi. “A Natural Experiment of Social Network Formation and Dynamics.” *Proceedings of the National Academy of Sciences* 112, no. 21 (May 26, 2015): 6595–6600. doi:[10.1073/pnas.1404770112](https://doi.org/10.1073/pnas.1404770112).

### C. Conference Proceedings

1. Han, Yoon, Khim Yong Goh, Seung Hyun Kim and **Tuan Q. Phan**, “The Effect of Mental Stress on Mobile Ad Response Behavior.” *Statistical Challenges in Electronic Commerce Research*, June 26-28, 2017, Ho Chi Minh City, Vietnam.
2. Oh, Hyelim, **Tuan Q. Phan** and Khim Yong Goh, “Are You What You Tweet? The Impact of News Sentiment on Interplays between News Readership and Social Media Sharing.” *Statistical Challenges in Electronic Commerce Research*, June 26-28, 2017, Ho Chi Minh City, Vietnam.
3. Zhang, Xiaoqing and **Tuan Q. Phan**, “The Impact of Comparative Advantage on Users’ Subscription Duration and Engagement Behavior.” *Statistical Challenges in Electronic Commerce Research*, June 26-28, 2017, Ho Chi Minh City, Vietnam.

4. Tan, Tianhui, Prasanta Bhattacharya and **Tuan Q. Phan**, “Social Media-driven Credit Scoring: The Predictive Value of Social Structures.” *Statistical Challenges in Electronic Commerce Research*, June 26-28, 2017, Ho Chi Minh City, Vietnam.
5. Ding, Dan and **Tuan Q. Phan**, “News Feed Bundling: The Impact of Salience of Source Information on News Reading Behavior.” *Statistical Challenges in Electronic Commerce Research*, June 26-28, 2017, Ho Chi Minh City, Vietnam.
6. Tan, Tianhui and **Tuan Q. Phan**, “Social Media-Driven Credit Scoring: the Predictive Value of Social Structure”. *International Conference on Information Systems*, 2016, Dublin, Ireland.  
<http://aisel.aisnet.org/icis2016/DataScience/Presentations/18/>

- **Most Innovative Research-In-Progress Award**

7. Tan, Tianhui, Prasanta Bhattacharya and **Tuan Q. Phan**, “Credit-worthiness Prediction in Microfinance using Mobile Data: A Spatio-network Approach.” *International Conference on Information Systems*, 2016, Dublin, Ireland.  
<http://aisel.aisnet.org/icis2016/EBusiness/Presentations/28/>
8. Tan, Tianhui and **Tuan Q. Phan**, “A Method for Credit Scoring using Social Media.” *Statistical Challenges in Electronic Commerce Research*, 2016, Naxos, Greece
9. Bhattacharya, Prasanta, **Tuan Q. Phan**, and Khim Yong Goh. “Investigating the Effects of Self-Presentation At Social Network Sites On Purchase Behavior: A Text Mining and Econometric Approach.” *Statistical Challenges in Electronic Commerce Research*, 2016, Naxos, Greece
10. Faik, Isam, Prasanta Bhattacharya, and **Tuan Q. Phan**. “From Collective Sensemaking to Collective Mindfulness: The Evolution of Online Social Movements.” In *Academy of Management Proceedings*, 2016:18089. Academy of Management, 2016.
11. Bhattacharya, Prasanta, **Tuan Q. Phan**, and Khim Yong Goh. “Investigating the Effects of Self-Presentation At Social Network Sites On Purchase Behavior: A Text Mining and Econometric Approach.” *Marketing Science*, 2016, Shanghai, China
12. Bhattacharya, Prasanta, **Tuan Q. Phan**, and Edoardo Airoldi. “Analyzing the Co-Evolution of Network Structure and Content Generation in Online Social Networks.” *European Conference on Information Systems*, May 29, 2015. Munster, Germany. [http://aisel.aisnet.org/ecis2015\\_cr/18](http://aisel.aisnet.org/ecis2015_cr/18)
13. Bhattacharya, Prasanta, **Tuan Q. Phan**, and Linlin Liu. “Privacy-Preserving Distributed Analytics: Addressing the Privacy-Utility Tradeoff Using Homomorphic Encryption for Peer-to-Peer Analytics.” *International Conference on Information Systems*, 2015, Dallas, Texas, USA.  
<http://aisel.aisnet.org/icis2015/proceedings/DecisionAnalytics/8/>
14. Bhattacharya, Prasanta, **Tuan Q. Phan**, and Edoardo Airoldi. “Investigating the Impact of Network Effects on Content Generation: Evidence from a Large Online Student Network.” *International Conference on Information Systems*,

2015, Dallas, Texas, USA.

<http://aisel.aisnet.org/icis2015/proceedings/SocialMedia/12/>

15. Bhattacharya, Prasanta, **Tuan Q. Phan**, and Khim Yong Goh. “Investigating the Effects of Self-Presentation At Social Network Sites On Purchase Behavior: A Text Mining and Econometric Approach.” *International Conference on Information Systems, 2015*, Dallas, Texas, USA
16. Han, Yoon, Khim Yong Goh, Seung Hyun Kim, and **Tuan Q. Phan**. “The Effect of Repeated Ad Exposure and Physical Avoidance on Consumers’ Mobile Ad Response.” *International Conference on Information Systems, 2014*, Auckland, New Zealand.  
<http://aisel.aisnet.org/icis2014/proceedings/EBusiness/45/>
  - **Best Research-in-Progress Award, runner up**
17. Tan, Tianhui, and **Tuan Q. Phan**. “How Superbowl Commercials Affect My Social Network: An Empirical Study on the Evolution of Social Ties through Revealed Preferences.” *International Conference on Information Systems, 2014*, Auckland, New Zealand.  
<http://aisel.aisnet.org/icis2014/proceedings/EconomicsandValue/13/>
18. Bhattacharya, Prasanta, **Tuan Q. Phan**, and Khim Yong Goh. “Investigating the Effects of Self-Presentation At Social Network Sites On Purchase Behavior: A Text Mining and Econometric Approach.” *Pacific-Asia Conference on Information Systems, 2014*, Chengdu, China.  
<http://aisel.aisnet.org/pacis2014/348/>
19. Xu, Haifeng, Bernard Tan, and **Tuan Q. Phan**. “How Does Online Social Network Change My Mood? An Empirical Study of Depression Contagion On Social Network Sites Using Text-mining.” *International Conference on Information Systems, 2013*, Milan, Italy.  
<http://aisel.aisnet.org/icis2013/proceedings/ResearchInProgress/44/>
20. Cavusoglu, Huseyin, **Tuan Q. Phan**, Hasan Cavusoglu, and Edoardo M. Airoidi. “Do Privacy Controls Increase the Openness of Online Social Network Users: Analysis of Information Disclosure Behavior Through a Natural Experiment,” *International Conference on Information Systems, 2013*, Milan, Italy.  
<http://aisel.aisnet.org/icis2013/proceedings/ResearchInProgress/54/>
21. Cavusoglu, Huseyin, **Tuan Q. Phan**, Hasan Cavusoglu, and Edoardo M. Airoidi. “Do Privacy Controls Increase the Openness of Online Social Network Users: Analysis of Information Disclosure Behavior Through a Natural Experiment,” *Marketing Science, 2013*, Istanbul, Turkey
22. Chen, Qing, and **Tuan Q. Phan**. “Do Pepsi Drinks Talk about Sleepwalker? The Effects of Self-Presentation and Conformity in Competing Word-of-Mouth.” *International Conference on Information Systems, 2012*, Orlando, FL, USA. <http://aisel.aisnet.org/icis2012/proceedings/ResearchInProgress/84/>
23. Mobius, Markus, **Tuan Q. Phan**, and Adam Szeidl. “Treasure Hunt: A Field Experiment on Social Learning,” *Workshops on Information Systems and Economics*, Dec. 2010, St. Louis, MO, USA

#### D. Book Chapters

1. Pervin, Nargis, **Tuan Quang Phan**, Anindya Datta, Hideaki Takeda, and Fujio Toriumi. “Hashtag Popularity on Twitter: Analyzing Co-Occurrence of Multiple Hashtags.” In *Social Computing and Social Media*, 169–182. Springer, 2015. [http://link.springer.com/chapter/10.1007/978-3-319-20367-6\\_18](http://link.springer.com/chapter/10.1007/978-3-319-20367-6_18).
  2. Lu, Xuesong, **Tuan Quang Phan**, and Stéphane Bressan. “Incremental Algorithms for Sampling Dynamic Graphs.” In *Database and Expert Systems Applications*, 327–341. Springer, 2013. [http://link.springer.com/chapter/10.1007/978-3-642-40285-2\\_29](http://link.springer.com/chapter/10.1007/978-3-642-40285-2_29).
- E. Papers Under Review
1. “Treasure Hunt: Social Learning in the Field” with Markus Mobius and Adam Szeidl, *Econometrica* (Preparing for 2<sup>nd</sup> round resubmission)
  2. “A Co-evolution Model of Network Structure and User Behavior in Online Social Networks: The Case of Network-Driven Content Generation,” with Prasanta Bhattacharya, Xue Bai, and Edoardo M. Airoidi, *Information Systems Research* (Preparing for 2<sup>nd</sup> round resubmission)
  3. “The Effect of Consumers’ Affect State on Mobile Ad Response Behavior: An Image Sentiment Processing and Econometric Modeling Approach,” with Mike Han, Khim Yong Goh, and Seung Kim, *Information Systems Research* (Preparing for 2<sup>nd</sup> round resubmission)
- F. Working Papers
1. “Investigating the Effects of Self-Presentation at Online Social Network Sites and Brand Pages on Offline Purchase Behavior,” with Prasanta Bhattacharya and Khim Yong Goh.
  2. “Modeling the Co-evolution of Content Production in Reaction to Privacy Control Changes on Facebook,” with Prasanta Bhattacharya and Edoardo Airoidi
  3. “Battling Diabetes through Food photography: An Image-based Utility Maximization Framework for Diet Diagnostics” with Prasanta Bhattacharya and Qiu Lin
  4. “Why Do People Keep Using Social Network Sites (SNS): Understanding the Formation of SNS Addiction,” with Haifeng Xu and Bernard Tan
  5. “Examining the Timing Effect of Information Diffusion on Social Media Platforms: A Temporal Networks Approach,” with Qingliang Wang and Khim Yong Goh
  6. “Homophily and Influence: Pricing to Harness Word-of-Mouth on Social Networks” with Peter Zubcsek and Xuesong Lu
  7. “Respondent-Driven Sampling in Large Social Networks,” with Edoardo Airoidi
  8. “Do Pepsi Drinks Talk about Sleepwalker? The Effects of Self-Presentation and Conformity in Competing Word-of-Mouth,” with Prasanta Bhattacharya and Khim Yong Goh
  9. “A Peer-to-Peer System for Secure Distributed Analytics,” with Prasanta Bhattacharya

G. Invited Academic Talks and Presentations

1. TBA, NTU Business School, Marketing Department, 2017
2. **Phan, Tuan Q.**, “Fine-grained Social Science through Big Data - an overview and a case study on self-presentation.” NUS Department of Economics, Nov. 17, 2016
3. Bhattacharya, Prasanta, **Tuan Q. Phan**, and Khim Yong Goh. “Investigating the Effects of Self-Presentation At Social Network Sites On Purchase Behavior: A Text Mining and Econometric Approach.” Invited talk at *China-Europe International Business School Marketing Workshop*, 2016, Shanghai, China
4. **Phan, Tuan Q.**, “A Method for Credit Scoring Using Social Media.” Department of Decision of Sciences, NUS Business School, Feb. 24, 2016
5. **Phan, Tuan Q.**. “Investigating the Effects of Image-Seeking Behavior at Social Network Sites on Purchase Behavior: A Text Mining and Econometric Approach”. Department of Decision Sciences, NUS Business School. April 23, 2014
6. **Phan, Tuan Q.**, and Edoardo M. Airoidi. “How Natural Disasters Affect Human Social Networks: A 4-Year Controlled Natural Experiment.” Workshops on Information Networks (WIN, 2013), New York City, USA
7. **Phan, Tuan Q.**, and Edoardo M. Airoidi. “How Natural Disasters Affect Human Social Networks: A 4-Year Controlled Natural Experiment.” *Fudan University Research Symposium* (2013), Shanghai, China
8. **Phan, Tuan Q.** and David Godes. “The Evolution of Endogenous Influence,” *Cheung Kong Graduate School of Business Marketing Research Forum* (June 2012), Beijing, China
9. **Phan, Tuan Q.** and David Godes. “The Evolution of Endogenous Influence,” *Complexity in Business Conference* (Nov. 2010), Washington, DC.
10. **Phan, Tuan Q.** and David Godes. “The Evolution of Endogenous Influence,” *ITA Software* (Aug. 2010), Cambridge, MA.
11. Mobius, Markus, **Tuan Q. Phan**, and Adam Szeidl. “Treasure Hunt: A Field Experiment on Social Learning,” *Society for Economic Dynamics* (July 2010), Montreal, Canada.
12. Mobius, Markus, **Tuan Q. Phan**, and Adam Szeidl. “Treasure Hunt: A Field Experiment on Social Learning,” *Public Economic Theory Annual Conference* (June 2009), Galway, Ireland.
13. Mobius, Markus, **Tuan Q. Phan**, and Adam Szeidl. “Treasure Hunt: A Field Experiment on Social Learning,” *INFORMS Annual Meeting* (Oct. 2008), Washington, DC.

H. Industry Talks:

1. June 5, 2017, *Ministry of Education*, “Social Network Analysis”
2. Feb. 22, 2017, *OCBC, The Vault*, “Big Data Disruptions”
3. Oct. 18, 2016, *PyData Singapore*, “Responsible Analytics: Causality”

4. April 13, 2016, *Hewlett Packard Enterprise*, APAC Marketing Annual Meeting, “Big Data-Driven Marketing and Social Media”
  5. Jan. 13, 2016, *VISA*, “Big Data, Consumer Analytics and Marketing”
- I. Research Grants:
1. 2016, SGD 900,000, **NUS School of Computing Strategic Initiatives**: “Computational Social Science Infrastructure”
  2. 2016, SGD 100,000, **Social Science Research Council** Seed Funding: “Regionalism in the 21st Century: Singapore, Asia, and Beyond”
  3. 2014, SGD 178,500, **NUS Research Grant**: “Investigating the Network Economy: A Methodological and Empirical Approach”
  4. 2014, SGD 10,000, **Lenovo**: “Social media listening for product design”
  5. 2012, SGD 49,500, **NUS Research Grant**: “Social and media webcrawling and analytics for financial valuations and consumer index”
  6. 2011, SGD 240,000, **NUS Startup Grant**: “Investigation on consumer behavior in social networks through theoretical, empirical, and experimental methods.”
- J. Academic Community:
1. Workshop on Educational and Social Science Technologies, NUS, Singapore (19-21 July 2017, co-organizer)
  2. Statistical Challenges in Electronic Commerce, HCMC Vietnam (2017 conference co-chair)
  3. Ethics & Social Media International Research Workshop, Paris, France (2017 program committee)
  4. Conference on Information Systems and Technology (2016 program committee; 2017 program committee)
  5. European Conference on Information Systems (ECIS 2016 associate editor, ECIS 2017 associate editor)
  6. International Conference on Information Systems (2012 reviewer, 2013 associate editor, 2014, 2015, 2016 associate editor, 2017 associate editor)
  7. Pacific Asia Conference on Information Systems (Track Chair 2015)
  8. Reviewer for *Management Science*, *Information Systems Research (ISR)*, *MIS Quarterly*, *Journal of the Association of Information System (JAIS)*, *ACM Transactions on Management Information Systems (ACM TMIS)*, *ACM Transactions on Social Computing (ACM TSC)*, *Annals of Applied Statistics*, *Information Technology Management*, *Internet Research*
- K. PhD students:
1. Prasanta Bhattacharya, main supervisor (expected 2017), first placement: ASTAR
  2. Yoon Han, co-supervisor (expected 2017), first placement: Asst. Prof. Harbin Institute of Technology
  3. Tan Tianhui, main supervisor (expected 2018)

4. Zhang Xiaoqing, main supervisor (expected 2019)
  5. Ding Dan, main supervisor (expected 2020)
- L. Member of PhD committee for:
1. Song Yi, Computer Science (2014)
  2. Ping Wenjie, Information Systems (2014)
  3. Rohit Nishant, Decision Science (2014)
  4. Zou Xiao, Information Systems (2015)
  5. Xu Xiaoying, Information Systems (2015)
  6. Yue Yanzhen, Information Systems (2015)
  7. Luo Cheng, Information Systems (2016)
  8. Li Zhuolun, Information Systems (2016)
  9. Gelli Francesco, Computer Science (expected 2019)
  10. Ashish Deepak Dandekar, Computer Science (expected 2018)
- M. MComp Thesis supervisor for:
1. Obaid Muhammad Talha (2017)
  2. Peng Jinyue (2016)
- N. Undergraduate thesis supervisor for:
1. Xiaobo Tian (2015)
  2. Yu Zheng (2015)
  3. Xuan Yu Chew (2015)
  4. Ivan Teck Meng Chew (2015)
  5. Tingting Guo (2014)
  6. Xiawei Zhang (2014)
  7. Ashish Tayal (2014)
  8. Khyathi Kumar (2014)
  9. Yilin Li (2014)
  10. Linlin Liu (2014)
  11. Parth Pathak (2013)
  12. Xue Lin (2013)
  13. Tianhui Tan (2013)
- O. Past RAs, UROP and Post-docs:
1. Xuesong Lu, Postdoc 2017-
  2. Prasanta Bhattacharya, PhD RA 2016-2017
  3. Mike Han Yoon, PhD RA 2016
  4. Malyatha Shridharan, UROP 2017-present



5. Mingzhou Che, UROP 2016-2017
6. Venkataraman Poornima, UROP 2016
7. Xuesong Lu, PhD RA 2013
8. Ivan Chew, UROP 2013
9. Kothavari Rajendran, MComp RA 2013

P. NUS Service:

1. May, 2017 – Present, SoC New Building: Space Norms Committee
2. Aug, 2015 – Present, NUS School of Computing Graduate Committee
3. Aug, 2013 - Jan, 2015, NUS School of Computing Executive Committee
4. Aug, 2013 – Present, NUS Ballroom Club, Academic Advisor
5. 2015, 2<sup>nd</sup> NUS Ballroom Competition, Chairman
6. 2014, 1<sup>st</sup> NUS Inaugural Ballroom Competition, Chairman

Q. Fellowships, Awards, and Honors

1. 2005 – 2010, Harvard Business School Graduate Student Fellowship
2. 2002, Winner of MIT Mobile Autonomous Systems Laboratory (MASLAB) Robot Competition

R. Industry Research Collaborations:

1. 2017-Present: **Singapore Airlines**, a major airline  
*Pilot training, operations, and airplane analytics*
2. 2017-Present: **ValueMax**, the oldest pawn shop in Singapore  
*Credit scoring for unsecure lending, and customer analytics*
3. 2017-Present: **GlycoLeap**, a diet management mobile application service for diabetes  
*Image-based food and health recommendation, and analysis of electronic medical records*
4. 2016-Present: **Viki**, A leading video streaming service of foreign dramas and shows  
*Subscription prediction and language learning using video and EdTech*
5. 2016-Present: **WeGo**, A leading flight search engine  
*Consumer behavior*
6. 2016-Present: **Axiata Group**, A major telecommunication company  
*Churn analysis and prediction, peer-to-peer payments*
7. 2015-Present: **Singapore Press Holdings**, Major publisher with 18 newspapers and magazines  
*Social media, subscription, and readership analytics*
8. 2015-2017: **Changi Airport Group**, Rated best airport in the world  
*Retail analytics*

9. 2014-Present: **Lenddo**, Provides micro-finance using social media  
*Prediction of loan defaults using social media, network, and location data*
  10. 2014-Present: **ReadyFor**, Japan's largest crowdfunding website  
*CRM and backing prediction*
  11. 2014-Present: **Lenovo**, World's largest laptop manufacturer  
*Analyzing social media and image sentiment analysis*
  12. 2013-Present: **CashSlide**, Korea's leading opt-in mobile advertising platform  
*Perform image sentiment analysis and CTR prediction*
  13. 2011-Present: **Wing Tai Group**, A leading retail and lifestyle leader  
*Retail analytics*
  14. 2011-Present: **Facebook**, A major social network site  
*Social media and networks analysis*
- S. Industry Consulting: Autodesk, HP Enterprise, Lenovo, Changi Airport Group, DBS, OCBC, SPH, Unilever, Singtel, ACG Management, Axiata

## **TEACHING**

- A. NUS, Department of Information Systems, School of Computing
  - *IS5126*, Hands-on with Business Analytics (Fall 2012, Spring 2014, Spring 2015, Spring 2016, Spring 2017)
  - *BT3102*, Computational Methods in Business Analytics (Fall 2015, Fall 2016)
  - *IS3222*, IT&CRM: Spring 2012, Spring 2013, Fall 2013
- B. NUS Business School, Executive Education:
  - Custom Program for Axiata (2016)
  - Leading with Big Data Analytics (2015-present)
- C. NUS Center for Healthcare Informatics, Healthcare Analytics (2014)
- D. Harvard University, Advanced Game Theory: Spring 2008 (teaching fellow, undergrad)