

## Research Summary

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Research Inspiration: Believe in altruism. Believe in the power of groups. Humans have theory of mind to reason, empathize, and help others.

Dissertation Summary: "In Search of Homo Sociologicus" - Develop mathematical models and simulations to study how people take bottom-up group actions efficiently through reasoning with higher order beliefs and taking strategic decisions.

Research Keywords: Game Theory, Epistemic Logic, Knowledge Representation, Social Networks, Social Reasoning, Decision Theory

## Core Competence

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Python, JavaScript, Mathematical Modelling, Simulation, Data Analysis, Network Analysis, XML, HTML, Prolog, Windows, Mac OS X, Linux

## Education

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### **The City University of New York, New York, US**

Ph.D. in computer science, 2017 (expected)

*Currently working with Adam Brandenburger (Stern Business School NYU) on Epistemic Game Theory and its application in AI*

Activities as a visiting student at Stanford in 2015 - 2017:

- Research talks on influence in social networks at both philosophy and computer science departments.

- Book contribution: "Strategic Belief Updates through Influence in a Community", a special issue "Logic and Games" Journals of Studies in Logic, invited by Prof. Sir. Johan van Benthem

### **University of Amsterdam, Amsterdam, NL**

M.Sc. in Logic, 2013

B.Sc. in Economics and Business, 2009

## Awards, Scholarships & Honors

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CUNY Graduate Center Doctoral Student Research Grant 2016

CUNY Graduate Center Conference Presentation Support Fund 2015

CUNY Graduate Center Enhanced Chancellor's Fellow <i>A 5-year PhD fellowship of \$125,000 for top 5% Ph.D. students</i>	2010 - 2015
Plonie van der Haagen-Stichting Women Excellence Scholarship <i>A full-year scholarship that covers tuition and living cost, €12,000</i>	2009
Santa Fe Institute Young Talent Outreach Fellowship <i>A fully funded academic visit at "Dynamics &amp; Quantitative Studies of Human Behavior and Institutions" research group</i>	2009
Santa Fe Institute Complex Systems Summer School Scholarship <i>5% award rate globally</i>	2008
The 8 <sup>th</sup> SWR-Hendrik Muller Fellowship <i>An annual award from The Royal Dutch Academy of Science &amp; Arts to 18 students nation-wide</i>	2006

### Work in Progress

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**Yunqi Xue**, Rohit Parikh and Fenrong Liu, "Balancing Individual and Network Belief in Strategic Decisions"

**Yunqi Xue** and Fenrong Liu, "Privacy Logic"

**Yunqi Xue** and Adam Brandenburger, "Defining Prosocial Behavior in AI"

### Publications in Journals, Conferences and Workshops

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**Yunqi Xue**, Rohit Parikh and Mihai Gociu, "Simulating Strategic Social Influence", The 28th Stony Brook International Conference on Game Theory, New York, US, July 2017.

**Yunqi Xue**, Rohit Parikh and Mihai Gociu, "Social Power in Different Network Structures", The Games, Networks and Social Epistemology Conference, April 2017.

**Yunqi Xue** and Rohit Parikh, "Strategic Influence in Different Social Structures", The 27<sup>th</sup> Stony Brook International Conference on Game Theory, New York, US, July 2016.

**Yunqi Xue** and Rohit Parikh, "Strategic Belief Updates through Influence in a Community", *Studies in Logic* 8, no. 4, 124–143, December 2015.

Rohit Parikh and **Yunqi Xue**, "Knowledge and Common Knowledge in the Era of Social Software", 11<sup>th</sup> International Conference on Technology, Knowledge and Society, University of California, Berkeley, US, February 2015.

Rohit Parikh and **Yunqi Xue**, "Expert Influence in a Community", 14<sup>th</sup> Asian Logic Conference, IIT Bombay, Mumbai, India, January 2015

**Yunqi Xue**, "Towards Closed-World Reasoning in Games—Ultimatum Game Revisited". ILLC Master Thesis, Universiteit van Amsterdam, 2013.

**Yunqi Xue** and Andreas Witzel, "Belief and Cooperation in Simple Information Structures", Palmyr VIII Paris-Amsterdam-Switzerland Logic meeting of Young Researchers on Formal Epistemology, Lausanne, Switzerland, May 2009

**Yunqi Xue** and Andreas Witzel, “Information Structures and Beliefs in Public Goods Games”, the 10<sup>th</sup> Szklarska Poreba Workshop on Formal Learning, Poland, February 2009

### Seminar Research Talks

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“Rapid Knowledge Revision in a Community”, the Seminar of Stanford Logic Group, Computer Science department, Stanford University, June 2015

“Expert Knowledge Influence in Social Networks”, Topics in Logic and Agency Seminar, Philosophy department, Stanford University, May 2015

“Review of ‘Ron was wrong, Whit was right.’ - online security with RSA system.”, Graduate Center Cryptography Student Seminar, CUNY, September 2012

“Closed World Reasoning”, Knowledge Game and Belief Seminar, Graduate Center CUNY, April 2010

“Modern Logic and Economics 1 – Public Goods Game Revisited”, Santa Fe Institute, July 2009

“Modern Logic and Economics 2 – Ultimatum Game Revisited”, Santa Fe Institute, July 2009

### Teaching Experience

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*As part of the Enhanced Chancellor Fellowship, functioned as an adjunct professor who gave all the lectures and labs, designed and graded all the homework, midterms and finals to 250+ students.*

#### **Fall & Spring 2013**

Computing: Nature, Power and Limits  
Applications of Computer Science

#### **Spring 2012**

Applications of Computer Science  
Paradoxes and the Limits of Knowledge

#### **Fall 2012**

Theoretical Computer Science  
Applications of Computer Science

#### **Fall 2011**

Applications of Computer Science  
Computing: Nature, Power and Limits

### Academic Service

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**Reviewer**, the 10<sup>th</sup> International Symposium on Logical Formalization on Commonsense Reasoning 2011

**Reviewer**, Amsterdam Social Science, since 2009

**Research Assistant**, University of Amsterdam NWO Vidi grant, PI: Jeroen de Kloet, Aug. - Oct. 2009