Curriculum Vitae

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Department of Economic
Simon Fraser University
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Education

PhD in Economics, 2010 - present
Simon Fraser University, Burnaby - Canada
Thesis: Essays on Social and Economic Networks
Expected Completion: June 2016

Masters in Physics, 2007 - 2010
Simon Fraser University, Burnaby - Canada
Transfered to Economics Sep 2010
Thesis: Systematic studies on energy calibration of the ATLAS Detector, CERN

B.Sc. in Physics, 2002 - 2006
Sharif University of Technology, Tehran - Iran

Research Fields

- **Applied Microeconomics**
- **Social and Economic Networks, Public Economics, Development Economics**

Job Market Paper

- **On the Impact of Social Networks on Charitable Behaviour: Theory and Evidence**

study the direct and spillover effects of social interactions using in a network of volunteers from Engineers Without Borders (EWB), Canada. I model social interactions as a network game in which agents simultaneously choose their effort levels, taking the network and their friends' efforts as given. The effects from social interactions are introduced through two separate channels: a strategic interaction term which affects the marginal benefit from supplying effort and a direct spillover term affecting the level of an agent's payoff. I construct three different categories of online and offline networks and estimate the model using instrumental variables and system GMM. The identification strategy relies on the yearly variation in the location of the EWB national conference and new members' participation levels in this event each year. The estimates demonstrate different patterns for engagement versus fundraising activities. Large significant levels of strategic complementarities are always present in fundraising activities regardless of the definition of links, however, in engagement activities, strategic complementarities are only significant in online networks. Additionally, engagement activities exhibit positive significant levels of direct spillovers for all networks. In contrast, in fundraising campaigns, the direct spillover effect is only significant in large offline networks.

Awards and Fellowships

- **President's Graduate Student Research Scholarship** (2013)
- **Graduate Fellowship Award** (2011, 2012, 2013)
- **Travel and Minor Research Award** (2012, 2013, 2014)

Conference Attendance

Conference Presentation:

- ***The 11th Econometric Society World Congress 2015*** - *presented "A Theory of Twitter"*, Montreal, Aug 2015
- ***Canadian Economics Association Conference*** - *presented "A Theory of Twitter"*, Vancouver, May 2014
- ***Stats In Paris, Statistics and Econometrics of Networks*** - *poster presentation: "Economics of Crime Networks"*, Paris, Nov 2013
- ***Canadian Economics Association Conference*** - *presented "Economics of Crime Networks"*, Montreal, May 2013

Conference Attendance:

- ***Seattle-Vancouver Econometrics Conference***, Vancouver, Sep 2015
- ***Canadian Economics Association Conference***, Toronto, May 2015
- ***Canadian Econometrics Study Group***, Vancouver, Oct 2014
- ***2014 Network Science Conference***, Berkeley, June 2014
- ***Econometric Society North American Summer Meeting***, Chicago, June 2012

Academic Experience

- **Visiting Graduate Student with Matthew Jackson** - Economics Departments, Standford University, Spring 2014

Sessional Instructor - *4th year seminar course, Spring 2015*

- *Sole instructor for Econ 483 - Social and Economic Networks*

Teaching Assistant

- *Advanced Microeconomics - graduate course* (Fall 2015)
- *Intermediate Microeconomic Theory* (Summer 2012, 2014, 2015; Fall 2013, 2015; Spring 2013, 2014)
- *Mathematical Economics* (Fall 2010)
- *Canadian Microeconomics Theory* (Summer 2013)
- *Principles of Macroeconomics* (Spring 2010)
- *Principles of Microeconomics* (Spring 2014)

Research Assistant

- Research assistant for Prof. Alex Karaivanov - *Co-authored a paper on Economics of Crime Networks* (Spring 2012)
- Research assistant for Prof. Krishna Pendakur - *Project coordinator of the SSHERC grant application for the British Columbia Centre for Research on the Economics of Diversity* (Spring 2013)
- Research assistant for Prof. Alex Karaivanov - *Assisted on a theoretical paper joint with Anke Kessler* (Spring 2014)

Other Research Papers

• **A Theory of Twitter** - *joint with Anke Kessler*
We develop a theoretical network-based model of the social network Twitter, formulating individual interaction as a dynamic game in which heterogenous agents choose a 'niche' (a subset of the type space) to tweet in, and whom to follow. Agents consume tweets close to their own types, and seek to maximize the number of their followers. Starting from any initial niche with an arbitrary length, we show that the dynamic Markov process converges to a niche with a finite maximum length, and this niche contains agent's own type. We also show that information does not diffuse as widely as one might expect: although many agents are directly or indirectly connected to each other, the news does not travel too far since agents strategically choose what news to tweet or retweet in accordance with their niche, i.e., they strategically *filter* information. We also discuss the stable networks that the dynamic process converges to in equilibrium and show that the star network is never stable if agents are similar enough, and the only stable network is the bidirectional full network. In contrast, when agents are further away in the type space, the star network is the only stable network.

• **Optimal Crime Networks – Theory and Lessons for Policy** - *joint with Alexander Karaivanov, Steve Easton*
We construct a social network model of criminal activity. Agents' payoffs depend on the number and the structure of their connections with each other and are determined in a Nash equilibrium of a crime activity supply game. Unlike much of the literature which takes the network structure as given, we study *optimal networks*, defined as the networks that maximize the sum of agents' payoffs. We characterize the Nash equilibrium in crime activity and use our theoretical results to identify the optimal network for given cost and benefit parameters using an algorithm that searches over all possible non-isomorphic graphs of given size. We also analyze, via simulations, the effects of different anti-crime policies (both expected and unexpected) on the optimal crime network structure and the overall crime level – removing agents, removing links, and/or varying the probability of apprehension.

Work In Progress:

• *Empirical Investigation of Dynamic Networks*

• *Social Networks and Opinion Leaders: How do Influencers Influence? Evidence from Engineers Without Borders*

• *Diffusion of Peer to Peer Fundraising Campaign*

References

- **Prof. Matthew Jackson**, Stanford University
  contact: 1-650-723-3544, jacksonm@stanford.edu
  mailing address: Department of Economics, 579 Serra Mall
  Stanford University, Stanford CA 94305-6072, USA

- **Prof. Alexander Karaivanov**, Simon Fraser University
  contact: 1-778-782-6694, akaraiva@sfu.ca

- **Prof. Anke Kessler**, Simon Fraser University
  contact: 1-778-782-3443, akessler@sfu.ca

- **Prof. Brian Krauth**, Simon Fraser University
  contact: 1-778-782-4438, bkrauth@sfu.ca

- **Prof. Krishna Pendakur**, Simon Fraser University
  contact: 1-778-782-5501, pendakur@sfu.ca

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  8888 University Drive, Burnaby, B.C. Canada V5A 1S6

Other

- **Programming:** C++, Python, ROOT, Matlab, R, Stata, Mathematica
- **Operating Systems:** Unix, Linux, Windows
- **Languages:** English, Farsi, Turkish
- **Service:** President, SFU Economics Graduate Student Association (2011-2013)