Cover letter

Applicant name: Jun Chen

Email: jchen3@caltech.edu

Contact: Division of the Humanities and Social Sciences 228-77

California institute of Technology

Pasadena, California 91125

Telephone: (+1)626-616-0216

Name of the recommendation letter writer: Professor Michael Ewens

Jun Chen

Division of the Humanities and Social Sciences 228-77
California Institute of Technology
Pasadena, CA 91125

Phone: +1-626-616-0216
E-mail: jchen3@caltech.edu

EDUCATION

2013 - present Phd Candidate, Economics and finance, California Institute of Technology.

2010 - 2013 M.Sc., mathematics (probability), Weizmann Institute of Science.

2004 - 2008 B.Sc., mathematics, Hunan University.

RESEARCH INTERESTS

Entrepreneurship, entrepreneurial finance, venture capital and equity crowdfunding.

WORKING PAPERS

Chen, J. and Elliott, M. (2015). Firm Capabilities and Industry Structure. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2753566

Chen, J. and Zhang, J. (2015). Strategic Delay in Dynamic Matching Markets. Available at SSRN: http://ssrn.com/abstract=2699630

SELECTED PUBLICATIONS IN PROBABILITY

Chen, J. and Kozma, G. (2014). Vertex-reinforced random walk on Z with sub-square-root weights is recurrent. *Comptes Rendus Mathematique*, 352(6):521–524

Chen, J. and Lucas, C. (2014). A generalized pólya's urn with graph based interactions: convergence at linearity. *Electronic Communications in Probability*, 19:1–13

Chen, J. (2014). Two particles' repelling random walks on the complete graph. *Electron. J. Probab*, 19(113):1–17

Benaïm, M., Benjamini, I., Chen, J., and Lima, Y. (2015). A generalized pólya's urn with graph based interactions. *Random Structures and Algorithms*, 46(4):614–634

FELLOWSHIPS, AWARDS AND HONORS

Outstanding Student Award (Hunan Univ.), First Grade Scholarship (Hunan Univ.), National Stipend (China), 2006 - 2007.

Outstanding Student Award (Hunan Univ.), First Grade Scholarship (Hunan Univ.), Yali Scholarship (awarded by Yale-China Association), 2005 - 2006.

Outstanding Student Award (Hunan Univ.), First Grade Scholarship (Hunan Univ.), National Scholarship (China), 2004 - 2005.

PERSONAL INFORMATION

Citizenship: China.

Gender: Male.

California Institute of Technology

Pasadena, California
Office of the Registrar

Print Date: February 16, 2016 7:54 AM

Official Graduate Record

Name: Chen, Jun
UID: 1959568
Day of Birth: October 09

Matriculation Date: September 30, 2013
Previous Institution(s): Weizmann Institute of Science M.S. 2013

Degree Seeking: PhD
Option: Social Science

Year of Study: G3
Option Adviser: Shum, Matthew S

Academic Record:

FA 2013-14

Course	Description	Att	Earned	Grade	Credits
SS 201A	Analytical Foundations of Social Science	9	9	A	36
SS 202A	Political Theory	9	9	A	36
SS 205A	Foundations of Economics	9	9	A	36
SS 222A	Econometrics	9	9	A+	39

Term Units Att: 36 Earned: 36 Att toward GPA: 36 Credits: 147 Term GPA: 4.1
Cum Units Att: 36 Earned: 36 Att toward GPA: 36 Credits: 147 Cum GPA: 4.1

WI 2013-14

Course	Description	Att	Earned	Grade	Credits
SS 201B	Analytical Foundations of Social Science	9	9	A	36
SS 202B	Political Theory	9	9	A	36
SS 205B	Foundations of Economics	9	9	A	36
SS 222B	Econometrics	9	9	A	36

Term Units Att: 36 Earned: 36 Att toward GPA: 36 Credits: 144 Term GPA: 4.0
Cum Units Att: 72 Earned: 72 Att toward GPA: 72 Credits: 291 Cum GPA: 4.0

SP 2013-14

Course	Description	Att	Earned	Grade	Credits
SS 201C	Analytical Foundations of Social Science	9	9	A-	33
SS 202C	Political Theory	9	9	B	27
SS 205C	Foundations of Economics	9	9	A	36
SS 222C	Econometrics	9	9	A-	33

Term Units Att: 36 Earned: 36 Att toward GPA: 36 Credits: 129 Term GPA: 3.6
Cum Units Att: 108 Earned: 108 Att toward GPA: 108 Credits: 420 Cum GPA: 3.9

SU 2013-14

Course	Description	Att	Earned	Grade	Credits
SS 300	Research in Social Science	36	36	P	0

Term Units Att: 36 Earned: 36 Att toward GPA: 0 Credits: 0 Term GPA: 0.0
Cum Units Att: 144 Earned: 144 Att toward GPA: 108 Credits: 420 Cum GPA: 3.9

FA 2014-15

Course	Description	Att	Earned	Grade	Credits
BEM103	Introduction to Finance	9	9	B+	30
SS 211A	Advanced Economic Theory	9	9	A	36
SS 223A	Advanced Topics in Econometric Theory	9	9	A	36
SS 229A	Theoretical and Quantitative Dimensions of Historical Development	9	9	A	36

Term Units Att: 36 Earned: 36 Att toward GPA: 36 Credits: 138 Term GPA: 3.8
Cum Units Att: 180 Earned: 180 Att toward GPA: 144 Credits: 558 Cum GPA: 3.9

WI 2014-15

Course	Description	Att	Earned	Grade	Credits
Ec/SS 124	Indentification Problems in the Social Sciences	9	9	A-	33
SS 210B	Foundations of Political Economy	9	9	A	36
SS 227	Identification Problems in the Social Sciences	9	9	A	36
SS 229B	Theoretical and Quantitative Dimensions of Historical Development	9	9	A	36
SS 232A	Historical and Comparative Perspectives in Political Analysis	9	9	A	36

Term Units Att: 45 Earned: 45 Att toward GPA: 45 Credits: 177 Term GPA: 3.9
Cum Units Att: 225 Earned: 225 Att toward GPA: 189 Credits: 735 Cum GPA: 3.9

SP 2014-15

Course	Description	Att	Earned	Grade	Credits
SS 211C	Advanced Economic Theory	9	9	A-	33
SS 300	Research in Social Science	27	27	P	0

Term Units Att: 36 Earned: 36 Att toward GPA: 9 Credits: 33 Term GPA: 3.7
Cum Units Att: 261 Earned: 261 Att toward GPA: 198 Credits: 768 Cum GPA: 3.9

SU 2014-15

Course	Description	Att	Earned	Grade	Credits
SS 300	Research in Social Science	32	32	P	0
SS 300	Research in Social Science	4	4	P	0

Term Units Att: 36 Earned: 36 Att toward GPA: 0 Credits: 0 Term GPA: 0.0
Cum Units Att: 297 Earned: 297 Att toward GPA: 198 Credits: 768 Cum GPA: 3.9

FA 2015-16

Course	Description	Att	Earned	Grade	Credits
SS 282A	Graduate Proseminar in Social Science	3	3	P	0

This official transcript is printed on security paper and does not require a raised seal.

Mary Neary Morley, Registrar

California Institute of Technology

Pasadena, California
Office of the Registrar

Print Date: February 16, 2016 7:54 AM

Official Graduate Record

Name: Chen, Jun
UID: 1959568
Day of Birth: October 09

Course	Description	Att	Earned	Grade	Credits
SS 300	Research in Social Science	33	33	P	0

Term Units Att: 36 Earned: 36 Att toward GPA: 0 Credits: 0 Term GPA: 0.0
Cum Units Att: 333 Earned: 333 Att toward GPA: 198 Credits: 768 Cum GPA: 3.9

WI 2015-16

Course	Description	Att	Earned	Grade	Credits
SS 300	Research in Social Science	36	0		0

Term Units Att: 0 Earned: 0 Att toward GPA: 0 Credits: 0 Term GPA: 0.0
Cum Units Att: 333 Earned: 333 Att toward GPA: 198 Credits: 768 Cum GPA: 3.9

- - - End of official student record - - -

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This official transcript is printed on security paper and does not require a raised seal.

Mary Neary Morley, Registrar

Application Essay for 2016 NBER Entrepreneurship Research Boot Camp

Jun Chen

Advised by Professor Michael Ewens and Professor Jean-Laurent Rosenthal at Caltech, I am a third year PhD student interested in the broad area of entrepreneurship and entrepreneurial finance. I am particularly fascinated by the questions related to start-up financing like venture capital and equity crowdfunding, the effect of entrepreneurship on the economy and the impact of institutions on entrepreneurship, etc.

My current research projects mainly focus on equity crowdfunding in the US. Legalized by the JOBS Act in 2012, equity crowdfunding is becoming a new source of financing for entrepreneurial firms and new investment vehicle for retail investors in the US. At the state level, since 2012 more than half of the states[1] have passed their own intrastate equity crowdfunding exemption rules, legalizing equity crowdfunding within each state border. At the federal level, the SEC has just adopted the final rule for Title III of JOBS Act[2] and equity crowdfunding will soon be available for all investors including both accredited and non-accredited in May of 2016. With these legal changes, it is well expected that a prosperous equity crowdfunding market will emerge in the US in the several years to come. For example, Ron Miller, CEO of a newly-registered national equity crowdfunding platform argues[3]:

"Title III represents the next wave of investment opportunities for entrepreneurs across America, which will stimulate the economy and create jobs…The US government has helped by lowering the barrier to entry, and now we will do our part. We believe this will spur a small business revolution, empower more women and minorities and revive the American dream."

While the government and business world have been making huge efforts to nurture the equity crowdfunding market, the academic research of it still largely lags behind. One of my projects uses intrastate equity crowdfunding data to study the impacts of equity crowdfunding on various economic variables. For example, several research questions around this project include how equity crowdfunding changes the cost of capital for the start-ups, how many and what type of start-ups will get financed by equity crowdfunding, and how equity crowdfunding affects firm formation. Since each state passed its own intrastate equity crowdfunding exemption at different points of time, the data allow for both a fixed effect and diff-in-diff.

Another of my crowdfunding projects is to examine the micro-structure of equity crowdfunding market. More specifically, I develop a model to study how the issuer and investors, different types of investors interact in an asymmetric information environment. The interaction of these different actors of equity crowdfunding will determine whether this new market will rise or fall.

[1] http://nasaa.cdn.s3.amazonaws.com/wp-content/uploads/2014/12/Intrastate-Crowdfunding-Overview-2015.pdf
[2] https://www.sec.gov/news/pressrelease/2015-249.html
[3] http://www.businesswire.com/news/home/20160129005744/en/Equity-Crowdfunding-Portal-StartEngine-Capital-LLC-Filed

The asymmetric information environment is also important because equity crowdfunding presumably bears more informational frictions than other traditional types of financial markets due to several specific features. First of all, equity crowdfunding aims to finance very early stage entrepreneurial firms, which are inherently risky and not information transparent. This setting raises questions on how the issuers price their offering securities, and how the issuers interact with investors through security pricing. Second, in the setting of equity crowdfunding, questions on the interaction between investors with different levels of information also arise. Although equity crowdfunding provides a new source of financing for start-ups beyond the traditional ones, it also overlaps with them. For example, a study (Agrawal, Catalini, & Goldfarb, 2011) shows that family and friends are still a big proportion of early investors in crowdfunding. A natural question is how the family and friends investors (presumably with more information about the start-up) interact with other investors not socially connected with the entrepreneur (presumably with less information about the start-up) in the equity crowdfunding market and how these different investors make their investment decisions sequentially. This question can be also asked in a slightly different way: how the informed investors (the investors in the crowd with insider information, also referred to as "crowd wisdom") interact with the uninformed ones to make their investment decisions?

Besides equity crowdfunding, I am also looking forward to other interesting research questions within the field of economics of entrepreneurship and entrepreneurial finance. Particularly, I would like to pursue researches in the more traditional areas of entrepreneurial finance such as venture capital and private equity, and I have been keeping consolidating my background and thinking about interesting questions along the lines. On the data side, I also have been in the process of being granted an access to the data of Private Capital Research Institute (PCRI)[4].

Though having built a strong research interest in the areas of entrepreneurship economics and entrepreneurial finance, I realize that I am still at a very early stage of an exciting but probably also arduous academic path. My advisor Michael Ewens credits his experience at a past Boot Camp as a critical part of his research trajectory. With these in mind, I strongly believe that a participation of the 2016 Entrepreneurship Research Boot Camp will be extremely useful for me too, which will not only improve my understanding of the entrepreneurship research topics I know, but also exposes me to many other research areas Caltech doesn't provide such as entrepreneurial strategy, entrepreneurship and productivity, etc.

References:

[1] Agrawal, A., Catalini, C., & Goldfarb, A. (2011). The Geography of Crowdfunding.

[4] PCRI is a non-profit organization, directed by Professor Josh Lerner at Harvard, and more information can be found at its website: http://www.privatecapitalresearchinstitute.org/index.php

CALIFORNIA INSTITUTE OF TECHNOLOGY

DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES 228-77

Michael Ewens
Associate Professor of Finance and Entrepreneurship
Tel: 691-512-3820
Email: mewens@caltech.edu

Monday, March 28, 2016

Recommendation for Mr. Jun Chen

Dear Boot Camp Organizers:

I am writing to introduce Mr. Jun Chen and in support of his application for the 2016 Entrepreneurship Boot Camp. As a 2009 attendee of the boot camp, I am well aware of the benefits the week has for a graduate student, specifically one with Jun's background. I thus also write this letter with a touch of envy, as I look back fondly at my experience in 2009 (he will probably stay at a much nicer hotel!). Jun is a PhD student in Caltech social sciences group, which is effectively an economics program. The program at Caltech is theory-heavy and has little coverage of entrepreneurship. Through my PhD course and advising, Jun became excited about research in entrepreneurship and venture capital. The boot camp's rich set of topics presented in depth by active researchers will be an excellent complement to his training. Caltech's size and faculty focus means there are few alternative structured ways that he can be exposed to the topics and methods covered in the boot camp. Moreover, he will find opportunities for networking with fellow graduate students whom he would otherwise never meet. So on opportunity for benefits alone, Jun is an excellent candidate. More importantly, he has a skill set to best incorporate all the knowledge gained from attendance.

I have known Jun since he took my PhD applied econometrics course last year and have been advising him since last spring. His original research agenda exploited his top-notch skills in theory, geared towards the economics of networks. He has since been studying game theoretic issues around crowdfunding and the information asymmetry that can hinder capital allocation. We are also working on a project about competitive impacts of crowdfunding on the types of projects funded and equilibrium pricing. Jun has taken the lead on formulating a tractable model to motivate our empirical analysis, while also gathering novel data on the history of angel and private equity financing. An encouraging sign of his potential, he has also come to learn the importance of diving deeply into the institutional and historical background of his topic of interest that can inform both his modeling and data collection. This involves reading dense SEC regulations and lawyer interpretations of the law.

Jun is well-trained in economics, but could use more exposure to applied work particularly in entrepreneurship. The rich set of topics covered at the boot camp will also help him explore interdisciplinary issues related to his existing work. Again, such an opportunity is difficult to find at Caltech. I envision him writing a dissertation that uses both theory and empirics. The boot camp will be a rare opportunity for him (or any other

Caltech PhD student) to be exposed to the latter. Jun exhibits several characteristics of a quality economics graduate student that will make the boot camp particularly beneficial. First, he has the innate curiosity to seek out puzzles and answers. Once guided to a path of potentially publishable idea, he is self-driven and willing to both critique and be critiqued. Last, Jun learns quickly and is willing to step outside of his comfort zone (i.e. theory). The combination of skills should provide him the platform to be an excellent applied theorist in entrepreneurship in a few years. Overall, Jun will be both a welcome addition to the boot camp cohort.

In short, I enthusiastically recommend you consider Jun for the entrepreneurship boot camp this summer. Let me know if I can be of further assistance.

Sincerely,



Michael Ewens