Application for Entrepreneurship Research Boot Camp 2025

- Name: Shirui Chen
- Contact Information: shiruich@uchicago.edu (email), 630-888-2076 (Phone)
- School: Booth School of Business, University of Chicago
- Area of Interest: Intangible capital, Macrofinance
- Year of entry into Ph.D program: 2022
- Expected year of completion: 2028
- Reference for letter of recommendation: Amir Sufi

SHIRUI CHEN

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Education

University of Chicago — Chicago, IL
Ph.D. in Financial Economics — 2023 -

University of Chicago — Chicago, IL
M.A. in Social Science with a Concentration in Economics — August 2020

- Degree thesis: *Can social media break the cycle of captured democracy?*

Huazhong University of Science and Technology — Wuhan, China
Bachelor of Economics — June 2019

Work and Research Experience

Becker Friedman Institute for Research in Economics, University of Chicago
Macro Finance Research Program — Chicago, IL
Research Professional — Oct 2020 - July 2022

- Constructed a detailed and interactive online documentation for working paper *Climate Change Uncertainty Spillover in the Macroeconomy*, and is the main maintainer of the GitHub repository for this paper
- Conducted the computations of illustrative economy in the paper mentioned above.
- Conducted the computations and provide graphic illustrations for the preliminary paper *Confronting Uncertainty in the Climate Chicago Dynamics*
- Responsible for connecting with Argonne National Laboratory to improving computational tools to enhance model solving efficiency and reliability

Academy of Macroeconomic Research, National Development and Reform Commission
Institute of Industrial and Technological Economics — Beijing, China
Research intern, Office of Agriculture Research — July 2018 - Aug 2018

- Supported programs for the Rural Revitalization Strategy aimed to develop the economy in rural areas of China.
- Interviewed farmers and officials in nineteen counties on a four-day field research in Tancheng County, Shandong Province.
- Edited part of the 151-page official development plan for Tancheng County.
- Wrote a six-page report identifying the difficulties that large-scale farmers are faced with based on field research.
- Hosted a regular discussion group for agricultural researchers and delivered a presentation on the book, *Great Nation Needs Bigger City*, about urbanization and its implications on China's Hukou system reform
- Translated and edited a seven-page conference speech, *How to Understand China's Industrial Policy and the "Made in China 2025" Campaign*, which tried to settle misunderstandings of China's industrial development strategy

Awards and Scholarships

2023 University of Chicago, Lee Prize for Best First Year Core Exam in Macroeconomics

Teaching experience

University of Chicago

2023 Theory of Income I (PhD), TA for Professor Nancy Stokey
2024 Theory of Income II (PhD), TA for Professor Mikhail Golosov
2024 Asset Pricing I (PhD), TA for Prossor Lars Peter Hansen and Professor John Heaton
2025 Financial Markets in the Macroeconomy (PhD), TA for Prossor Veronica Guerrieri

Technical Skills

C, C++, Python, MATLAB, R, Stata, Julia, LaTeX

Current research My general research interest lies in the macroeconomic implications of rising intangibles. My current research includes studying the interaction between the rise of intangible capital and bankruptcy system. Specifically, I extend the structural corporate finance model in Corbae and D'Erasmo (2021) to a two capital setting which distinguishes between tangible capital and intangible capital. The model implies that rising intangibles increases the cost of external debt financing due to limited pledgeability of intangible assets. In addition to this, I introduce a measure for bankruptcy efficiency which captures the feasibility of restructuring a viable firm within an economy. Given this additional feature, the model implies that under efficient bankruptcy resolution, profitable firms with inalienable intangible capital are able to be restructured and continue operating. Thus, higher bankruptcy efficiency mitigates the increased cost of borrowing under an intangible economy.

In parallel, I am also investigating customer capital as a specific type of intangible capital. While existing literature has examined the risk exposures of intellectual property and organizational capital, my work on customer capital aims to complete the picture of intangible risk by exploring its cyclicality and its impact on capital returns and economic welfare.

Future research Looking ahead, I plan to integrate R&D investment into my analysis. Specifically, I am interested in exploring the substitution between customer capital and R&D in response to changes in the credit market. By examining how the properties of different intangible assets differ in production and financing, my research may provide insights in the mechanisms driving cycles in the an increasingly knowledge-based economy.

Reasons to attend The Entrepreneurship research boot camp provides a valuable opportunity for me to explore how entrepreneurial incentives evolve in an economy transitioning from structure-based to knowledge-based. As some studies (Crouzet et al., 2022a,b) have shown, non-rivalry and limited-excludability of intangible capital is important property of intangible capital. Those property would then affect entrepreneurs' incentives in production as well as in financing. Participation in the boot camp will not only enrich my research but also deepen my understanding of innovation and creative destruction in an intangible economy, which are crucial for understanding the macroeconomic impact of rising intangibles.

References

Corbae, D. and D'Erasmo, P. (2021). Reorganization or Liquidation: Bankruptcy Choice and Firm Dynamics. *The Review of Economic Studies*, 88(5):2239–2274.

Crouzet, N., Eberly, J., Eisfeldt, A. L., and Papanikolaou, D. (2022a). Intangible capital, non-rivalry, and growth. *SSRN Electronic Journal*.

Crouzet, N., Eberly, J. C., Eisfeldt, A. L., and Papanikolaou, D. (2022b). A Model of Intangible Capital.

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February 2025

RE: Shirui (Suri) Chen

I am writing to support in the strongest terms possible Suri Chen for participation in the NBER Entrepreneurship Research Boot Camp for the summer of 2025. She would be a fantastic addition to the camp. I first got to know Suri as a second year Ph.D. student in my empirical corporate finance class. Suri finished first overall in the class, and she also received the top grade on the final exam. What makes this particularly notable is that Suri is known more as someone who has expertise in theory and modeling, and this is a class focused on empirical work and econometric implementation of different frameworks.

I was one of the reviewers for Suri's second year study, which is a requirement at Booth to continue matriculation in the Ph.D. program. Her second year study focuses on the rise of intangible capital, and its implications for firm financing. In particular, the study builds a quantitative model similar in spirit to the type of models used in the work of Dean Corbae of the University of Wisconsin. The key ingredients are (a) the use of intangible and tangible capital in production, (b) financial constraints, and (c) differences in how the different types of capital are treated in bankruptcy. In particular, the model focuses on the idea that intangible capital, while making firms more productive, is more difficult to handle in bankruptcy because creditors cannot as easily "grab" the intangible capital. The efficiency of the bankruptcy process, which is defined as how well the bankruptcy process preserves "going concern" value (which is closely tied to intangible capital value), therefore becomes crucial. The model is then used to examine aggregate outcomes based on a secular rise in the importance of intangible capital in production in different countries where bankruptcy is more or less efficient. There is also an empirical component of the paper, in which Suri collected panel data on 30 advanced economies from 2003 to 2019 that vary in terms of the bankruptcy regime efficiency. The central point of the study is that countries with an efficient bankruptcy system are well poised to experience the fruits (higher productivity) of a shift toward intangible capital in production, whereas countries with a less efficient bankruptcy system may end up stuck with the less productive tangible capital.

This is a very nice second year study. The reviewing team concluded: "We saw several notable strengths of the paper and the presentation. First, the research question is important. Linking the

rise of intangible capital with productivity in general equilibrium is first-order, and the predictions from her model about how intangibility interacts with financial constraints and bankruptcy filing are interesting. Shirui is also on top of the theory in the paper and presented well. Finally, the combination of a calibrated model, numerical experiments within the model, and motivational evidence showed a wide range of skills and helped build the body of evidence towards the paper's finding."

Given the quality of her work and our interactions, I have hired Suri as a research assistant during her third year. She is currently working in that capacity. She has been excellent, and I think she is going to do great work going forward. The specific project we are working on is firm financing during the financing cycle based on how much intangible capital is typically used in the industry. This is building off of my recent work with Bianca He and Lauren Mostrom on the striking differences across industries in investment in customer capital and knowledge capital. At a high level, we are testing the hypothesis that industries that rely more on customer and knowledge capital (think SaaS, information industries, naics code 51) may be more reliant on venture capital relative to banks early in the life-cycle because they must invest in much riskier and less tangible types of assets.

On a personal level, Suri is friendly, thoughtful, and collaborative. She will be a great contributor to the camp environment if she is accepted. So, in summary, Suri is fantastic, and her research interests lie squarely in the entrepreneurship space. She would be a great addition to the camp.

I should note that Lauren Mostrom was accepted last year, she attended the camp, and she raved about how much she enjoyed it. Lauren is a co-author on the recent study I have completed (along with Bianca He). We have a pipeline of talented students at Booth who are interested in issues closely related to entrepreneurship, and Suri fits into this broader group.

I hope this letter is helpful, and let me know if you have further questions.

Sincerely,

Amir Sufi