Jiwoo Bae

Information Systems & Management, Heinz College, Carnegie Mellon University

jiwoob@andrew.cmu.edu

4129098702

Dear Selection Panel members,

I am writing to apply to the 2026 NBER Innovation Research Boot Camp. I am a PhD student in Information Systems and Management at Carnegie Mellon University Heinz College, currently finishing up my second year. My primary research focus is the economics of innovation using open-source software (OSS) ecosystems as an empirical setting.

My current work studies how institutional design and governance shape innovation dynamics, with particular focus on OSS incubation by foundations. Through these studies, I aim to understand and clarify how institutional choices shape technological directions. These questions sits at the intersection of innovation, policy, and systems.

I am excited to attend the Innovation Research Boot Camp because it offers structured exposure to the foundational ideas and frontier empirical work in innovation economics that directly informs my research. The opportunity to engage with scholars motivated by adjacent work would be invaluable as I position my OSS-based work within the broader innovation literature.

My letter of recommendation will be provided by Professor Avinash Collis, my PhD advisor at Carnegie Mellon University.

Thank you very much for considering my application.

Sincerely,
Jiwoo Bae

Current & Completed PhD level Courses 2026

Course Title
PhD Econometrics I
Econometric Theory & Methods
Regression Analysis
PhD Microeconomics
PhD Seminar I
PhD Seminar II
PhD Seminar III
Introduction to Machine Learning
Building User focused Sensing Systems
Augmenting Human Intelligence
Seminar in Organizational Behavior
Seminar Meso OB Networks
Computational Social Science and Data Analysis
Analytical Structural Markets and Modeling

Jiwoo Bae

Ph.D. Student · Information Systems & Management · Carnegie Mellon University
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Education

Carnegie Mellon University, Pittsburgh, PA *2024 – 2029*
Ph.D. in Information Systems & Management *(Advisor: Avinash Collis, Ananya Sen)*
London School of Economics & Political Science, London, United Kingdom *2021 - 2022*
MSc Economics *(Advisor: Philippe Aghion)*
Korea University, Seoul, Republic of Korea *2015 - 2019*
BA Economics, International Studies *(Graduation with Great Honors)*

Selected Research

Innovation, Governance, and Open-Source Incubation (2025–)

- Built a large-scale panel dataset of open-source projects incubated by two major foundations to study how institutional transitions affect innovation dynamics.
- Analyze how changes in governance and organizational affiliation reshape experimentation and exploitation using quasi-experimental methods.
- Examine implications for innovation trajectories, coordination, and learning outside traditional firm boundaries.

Human–AI Collaboration and Experimentation (2025)

- Ideated an interactive AI system to study how groups generate, evaluate, and converge on ideas under ambiguity.
- Conducted user studies to understand how AI-mediated interaction affects exploration, coordination, and decision-making.

Event-Time and Competing-Risks Methods (2025)

- Re-implemented standard competing-risks survival models only in R to Python to study event timing and heterogeneous outcomes.
- Validated implementations against established econometric packages, enabling integration with modern ML workflows.

Work Experience

Teaching Assistant - Carnegie Mellon University(Heinz College) *2025–*

- A/B Testing, Managing Disruptive Technologies, AI Strategy

Associate — Bank for International Settlements (Innovation Hub, Swiss Centre) *2022–2023*

- Designed AMM-based FX simulation frameworks under CBDC settlement models for Project Marianain coordination with Schweizerisch Nationalbank, Monetary Authority of Singapore, Banque de France and incorporated cryptographic and privacy-aware constraints for Project Tourbillon.
- Designed and implemented futures integration within a real-time FX monitoring system used by central bank teams. Rio, for 7 central bank FX teams.
- Architected streaming data pipelines and analytical workflows (Databricks, Kafka, R) to enable real-time monitoring and visualization.

Skills

Languages: Python, R, SQL, C/C++
Libraries & Tools: PyTorch, scikit-learn, pandas, NumPy, Spark, Streamlit, Git
Human Language: English (near-native), Korean (native), Chinese (intermediate), German (beginner)

Research Statement

My research focuses on innovation dynamics, examining how and whether institutional boundaries and organizational design shape experimentation and coordination processes affect the direction of technological change. I am especially curious about settings where innovation occurs across open and closed systems, and where governance structures determine which ideas are explored, scaled, or abandoned.

My current work uses open-source software (OSS) incubation as an empirical setting to study how foundation-level institutional transitions affect innovation behavior across projects incubated by two major open-source foundations. I examine how entry into formal incubation alters innovation dynamics by connecting them to various mechanisms. Using project-level panel data and quasi-experimental designs, I study how incubation reshapes the balance between exploratory and exploitative activity, as well as the overall innovative effort. This work hopes to provide empirical evidence on how institutional design influences experimentation and learning outside traditional firm boundaries, and it serves as the starting point for my research agenda.

Building on this work, my future research will move beyond OSS as a single domain to study innovation across a range of open and closed technological systems. I am particularly interested in how experimentation unfolds in the context of emerging AI-driven technologies. More broadly, I am interested in exploring conditions under which exploration becomes difficult to sustain, how institutional constraints reshape innovative effort, and how they influence long-run innovation trajectories. Additionally I wish to connect micro-level innovation behavior to macro-level outcomes such as productivity growth, market structure, and inequality. My ongoing inquiry is oriented around finding answers to these questions.

I am seeking to attend the NBER Innovation Research Boot Camp because it offers a one of a kind, ideal intellectual space for situating my current work within the broader economics of innovation whilst building invaluable connections and deepening my knowledge. While my research engages directly with innovation questions, formal training in this field is rarely available within standard PhD coursework. Therefore, I am more than excited to participate in the boot camp to strengthen my foundations, refine my core questions, and better articulate my work's contribution to innovation scholarship while discovering new directions for future research.

Overall, I view the boot camp as a critical step in deepening my engagement with the innovation research community and in sharpening the theoretical grounding and policy relevance of my research as I pave my dissertation path.

Thank you for your time and consideration.

Sincerely,

Jiwoo Bae

February 12, 2026

Dear Brett

Please pass along the following letter recommendation for my PhD student, **Jiwoo Bae**, for the NBER Innovation Research Boot Camp 2026:

I am writing to express my strongest support for Jiwoo Bae's application to the 2026 NBER Innovation Research Boot Camp. As her PhD advisor at Carnegie Mellon University's Heinz College, I have seen Jiwoo develop a promising research agenda for her second-year PhD paper at the intersection of innovation, policy, and institutions, specifically focused on how governance and organizational design shape experimentation in open-source software (OSS) ecosystems. Jiwoo is in her second year and has already demonstrated strong empirical initiative by building a large-scale panel dataset to analyze how foundational transitions affect innovation dynamics using rigorous quasi-experimental methods. With a solid foundation in microeconomics and econometrics, she possesses the technical expertise to excel in this intensive program; however, because formal innovation economics coursework is lacking in her current PhD curriculum at CMU, this boot camp would provide the critical theoretical grounding and exposure to frontier work she needs to refine her dissertation research. I am confident that Jiwoo will both contribute to and benefit immensely from the intellectual community at the NBER.

Thank you - Avi

*AVINASH (AVI) COLLIS*Assistant Professor
Heinz College of Information Systems and Public Policy
Carnegie Mellon University
www.avinash.info