

# Junsup Shim | Curriculum Vitae

Dept. of Earth Science Education, Pusan National University  
2, Busandaehak-ro 63 beon-gil, Geumjeong-gu, Busan, Korea 46241  
✉ jsshim0312@gmail.com

## Academic Positions

<b>Assistant Professor</b> <i>Pusan National University, Korea</i>	<i>Mar 2026 – present</i>
<b>Distinguished Postdoctoral Fellow</b> <i>Academia Sinica Institute of Astronomy and Astrophysics, Taiwan</i>	<i>Jul 2022 – Feb 2026</i>
<b>Visiting Scientist</b> <i>Korea Institute for Advanced Study, Korea</i>	<i>Oct 2023 – Oct 2023</i>
<b>Visiting Scientist</b> <i>Canadian Institute for Theoretical Astrophysics, Canada</i>	<i>Jul 2023 – Aug 2023</i>
<b>Research Fellow</b> <i>Korea Institute for Advanced Study, Korea</i>	<i>Sep 2018 – Jun 2022</i>

## Education & Degrees

<b>Ph.D. in Astronomy</b> , Seoul National University, Korea <i>Advisor: Prof. Jounghun Lee</i> <i>Thesis: Cosmological Applications of Filamentary Structures in the Universe</i>	<i>Aug 2018</i>
<b>B.S. in Mechanical and Aerospace Engineering</b> , Seoul National University, Korea <i>Cum laude</i>	<i>Aug 2011</i>

## Publication Summary (Source: [NASA Astrophysics Data System](#))

**Total Publications:** 11 papers in peer-reviewed journals with 104 citations

- └ **First Author Publications:** 10 papers with 81 citations
- └ **Coauthor Publication:** 1 paper with 23 citations

**Unpublished Manuscripts:** 2 articles (on arXiv) with 12 citations

## Research Excellence

<b>PRL paper featured as Synopsis in Physics Magazine</b> Synopsis title: “Cosmic Handedness Might Show Up in Galaxy Spins” Publisher: American Physical Society ( <a href="#">Physics 18, s126</a> )	<i>2025</i>
<b>Publications in Premier Journals</b> First author papers in PRL (IF: 9.0) and ApJL (IF: 11.7)	<i>2025</i>
<b>National Junior Research Fellowship</b> Funded as PI (44,220 USD/yr) by National Research Foundation of Korea Project title: “Identifying the Ultimate Cosmology by utilizing Supercluster Straightness”	<i>2014 – 2018</i>

## Research Interests

- |                                   |   |
|-----------------------------------|---|
| – Parity symmetry of the Universe | – Nature of dark energy and dark matter |
| – Gravity on cosmological scales  | – Large-scale structure of the Universe |

## Talks at International Meetings, Colloquia, and Seminars in 3 years

---

19. [Seminar, invited] Institute of Physics at National Yang Ming Chiao Tung University, Taiwan, Dec 3, 2025, *"Probing Cosmic Parity Symmetry with Large-Scale Structure of the Universe"*
18. [Conference] Reconstructing the Universe, Taiwan, Dec 15 - 18, 2025, *"Improving cosmological constraints using galaxy intrinsic alignment in full-shape analysis"*
17. [Conference] The 3rd Shanghai Assembly on Cosmology and Structure Formation, China, Nov 16 - 21, 2025: *"Tightening Dynamical Dark Energy Constraints with Intrinsic Galaxy Alignments"*
16. [Colloquium, invited] Institute of Astronomy at National Central University, Taiwan, Oct 17, 2025: *"Tracing the Universe's Handedness Through Galaxy Spins"*
15. [Colloquium, invited] Institute of Astronomy at National Tsing Hua University, Taiwan, Oct 3, 2025: *"The Handed Cosmos: What Galaxies Reveal About Symmetry Breaking"*
14. [Seminar] Department of Physics at University of Seoul, Korea, Sep 24, 2025: *"The Handed Universe: What Galaxy Spins Can Tell Us"*
13. [Conference] CosKASI Conference 2025, Korea Astronomy and Space Science Institute, Korea, Sept 15 - 19, 2025: *"Tightening Dynamical Dark Energy Constraints with Full-shape Intrinsic Alignment of Galaxies"*
12. [Conference] International Symposium on Cosmology and Particle Astrophysics CosPA 2025, Institute for Basic Science, Korea, Jul 7 - 11, 2025: *"Tightening Dark Energy Constraints with Intrinsic Galaxy Shape Alignments"*
11. [Conference, invited] Parity Violation from Home (online conference), Nov 19 - 22, 2024: *"Probing Parity Violation in the Early Universe using Galaxy Spins"*
10. [Colloquium] Department of Astronomy at Yonsei University, Korea, Nov 8, 2024: *"Probing Parity Violation in the Early Universe using Galaxy Spins"*
9. [Colloquium] Korea Astronomy and Space Science Institute, Korea, Nov 6, 2024: *"Probing Parity Violation in the Early Universe using Galaxy Spins"*
8. [Seminar] Department of Physics and Astronomy at Seoul National University, Korea, Nov 5, 2024: *"Probing Parity Violation using Galaxy Spins"*
7. [Workshop] 11th KIAS Workshop on Cosmology and Structure Formation, Korea Institute for Advanced Study, Korea, Oct 27 - Nov 2, 2024: *"Probing Parity Violation in the Early Universe using Galaxy Spins"*
6. [Conference] COSMO'24, Kyoto University, Japan, Oct 21 - 25, 2024: *"Probing Parity Violation in the Early Universe using Galaxy Spins"*
5. [Conference] International Symposium on Cosmology and Particle Astrophysics CosPA 2024, Ningbo University, China, Jun 14 - 18, 2024: *"Probing Vectorial Parity Violation in the Early Universe"*
4. [Workshop] Large-scale Parity Violation Workshop, Academia Sinica Institute of Astronomy and Astrophysics, Taiwan, Dec 4 - 7, 2023: *"Detectability of Helical Vector Fossils in Galaxy Spin Maps"*
3. [Seminar, invited] Academia Sinica Institute of Physics, Taiwan, Jul 31, 2023: *"Cosmic Voids as Counterparts of Massive Clusters"*
2. [Seminar, invited] Canadian Institute for Theoretical Astrophysics, Canada, Jul 31, 2023: *"Cosmic Voids: Cluster Counterparts?"*
1. [Seminar, invited] Leung Center for Cosmology and Particle Astrophysics, Taiwan, May 3, 2023: *"Cosmic Voids: Cluster Counterparts?"*

## Professional Service

---

- Reviewer, Journal of Cosmology and Astroparticle Physics, Nov 2025 - present

- Reviewer, Astrophysics and Space Science, Aug 2023 – present
- SOC, Parity Violation From Home, Nov 2025
- ASIAA Colloquium Committee, Aug 2022 – Oct 2024
- ASIAA Lunch Talk Organizing Committee, Aug 2022 – Oct 2024
- Journal Club Organizer, KIAS Astrophysics Group, Mar 2021 – Aug 2021
- Organizing Committee, 2020 Korea Astrophysics Workshop, Nov 2020
- Organizing Committee, 9th KIAS workshop on Cosmology and Structure formation, Nov 2020
- Organizing Committee, Survey Science Group Workshop, Feb 2020
- Organizing Committee, 2019 KIAS Astrophysics Group Workshop, Nov 2019

## Mentoring Experience

---

- Master & Undergraduate Student Supervision
  - **Byoungjo Yu** (Master Y2) – Chungnam National Univ., Korea *Aug 2024 – present*  
 Co-supervision with Prof. Hyunmi Song  
*Project title: Boosting the sensitivity to primordial parity violation with optimally selected halos*
  - **Yu-Chien Hung** (Undergraduate Y3) – National Taiwan Univ., Taiwan *Jul 2025 – Dec 2025*  
*Project title: Probing cosmic alignments: Investigating shape correlations beyond galaxies*

## Teaching Experience

---

- **(Invited)** Lecturer at ASIAA Summer School, “Intro. to Modern Cosmology”, 2024 & 2025
- Teaching Assistant at Seoul Nat’l. Univ., “Intro. to Astrophysics 2”, Spring 2014
- Teaching Assistant at Seoul Nat’l. Univ., “Intro. to Modern Cosmology”, Fall 2013
- Teaching Assistant at Seoul Nat’l. Univ., “Man and the Universe”, Spring 2012 & 2013

## Language Proficiency

---

- Korean: Native
- English: Fluent

## Academic Referees

---

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>◦ <b>Prof. Christophe Pichon</b><br/> <a href="mailto:pichon@iap.fr">pichon@iap.fr</a><br/>           Institut d’astrophysique de Paris<br/>           Sorbonne Universite &amp; CNRS, France</li> </ul>              | <ul style="list-style-type: none"> <li>◦ <b>Prof. Dmitri Pogosyan</b><br/> <a href="mailto:pogosyan@ualberta.ca">pogosyan@ualberta.ca</a><br/>           Physics Department, Faculty of Science<br/>           University of Alberta, Canada</li> </ul>         |
| <ul style="list-style-type: none"> <li>◦ <b>Prof. Jounghun Lee</b><br/> <a href="mailto:cosmos.hun@gmail.com">cosmos.hun@gmail.com</a><br/>           Department of Physics and Astronomy<br/>           Seoul National University, Korea</li> </ul>         | <ul style="list-style-type: none"> <li>◦ <b>Dr. Teppei Okumura</b><br/> <a href="mailto:tokumura@asiaa.sinica.edu.tw">tokumura@asiaa.sinica.edu.tw</a><br/>           Institute of Astronomy and Astrophysics<br/>           Academia Sinica, Taiwan</li> </ul> |
| <ul style="list-style-type: none"> <li>◦ <b>Prof. Ue-Li Pen</b><br/> <a href="mailto:director@asiaa.sinica.edu.tw">director@asiaa.sinica.edu.tw</a><br/>           Institute of Astronomy and Astrophysics<br/>           Academia Sinica, Taiwan</li> </ul> |   |