

# CURRICULUM VITAE

LAST UPDATE: 07 JANUARY 2025

## HYEIN YOON

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### CURRENT POSITION

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**G-LAMP Postdoctoral Research Fellow (Employment)** Dec 2023 – Present  
Seoul National University, South Korea  
Institute for Data Innovation in Science (G-LAMP Program) / Department of Physics & Astronomy (Astronomy)  
**Research Fellow (Honorary)** Jan 2024 – Present  
Sydney Institute for Astronomy, School of Physics, The University of Sydney, Australia

### RESEARCH INTERESTS

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Environmentally-driven galaxy evolution over cosmic time — Neutral hydrogen (H I) gas in galaxies — H I 21-cm absorption and emission lines — Large radio surveys and data processing — Interferometric imaging — Data quality assessment — Atmospheric ducting — Automatic line search and source extractor

### EDUCATION

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**Ph.D. in Astronomy, Yonsei University, South Korea** Aug 2019  
**Thesis:** The Impact of Large-scale Environments on Galaxy Evolution: Insights from the Neutral Hydrogen Gas in Galaxies Inside and Outside of the Virgo Cluster  
**Thesis committee:** Prof. Aeree Chung (Yonsei; Supervisor), Dr. O. Ivy Wong (CSIRO), Prof. Sukyoung K. Yi (Yonsei), Prof. Myungkook James Jee (Yonsei), Prof. Ho Seong Hwang (SNU)  
**M.S. in Astronomy, Yonsei University, South Korea** Feb 2013  
**Thesis:** Diagnostics to Probe Environmental Effects on Late-type Galaxies in the Virgo Cluster  
**Thesis committee:** Prof. Aeree Chung (Yonsei; Supervisor), Prof. Yong-Ik Byun (Yonsei), Prof. Soo-Chang Rey (GNU)  
**B.S. in Astronomy, Physics (double major), Yonsei University, South Korea** Feb 2011

### ACADEMIC POSITIONS AND RESEARCH EXPERIENCE

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**Postdoctoral research fellow, IDIS, Seoul National University** Dec 2023 – Present  
- Research: Studying environmentally-driven galaxy evolution using H I and multi-wavelength data  
- Supervisor: Prof. Ho Seong Hwang, Prof. Jubee Sohn (Astronomy, supported by G-LAMP program)  
**Project Scientist, ASKAP–FLASH Survey Science Team** Oct 2021 – Present  
- Research: Observing H I 21-cm absorption, Data validation for ASKAP Commissioning and Full Survey  
- Affiliation: Research Fellow (Honorary affiliate, Jan 2024 – Present), The University of Sydney  
**Postdoctoral research associate, SifA, The University of Sydney** Sep 2019 – Dec 2023  
- Research: FLASH wide-field survey to detect H I 21-cm absorption lines toward  $0.4 < z < 1.0$   
- Supervisor: Prof. Elaine Sadler (Sydney Institute for Astronomy, Supported by ASTRO 3D program)  
**Endeavour research fellow at ICRAR/UWA** Aug 2016 – Mar 2017  
- Research visit: International Centre for Radio Astronomy Research/The University of Western Australia  
- Grant: Awarded Australian Government Endeavour Research Fellowship, Host: Dr. O. Ivy Wong (CSIRO)  
**Research assistant, Yonsei University** Mar 2011 – Feb 2013 (M.S.) / Mar 2013 – Aug 2019 (Ph.D.)  
- Research: Studying H I emission of galaxies in various density environments from void to clusters  
**Advanced schools, observer trainings, radio telescope visits:**  
- ATCA/Parkes/LBA training (2016, 2020, 2022, 2023), Pawsey supercomputing training (2019), NRAO imaging school (2014), Telescope visits (ATCA, JVLA, GMRT, NRO, FAST, KVN, Parkes, MeerKAT, TRA0: 2012 – 2024)

## OBSERVING EXPERIENCE AND SUCCESSFUL PROPOSALS

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**Observing bands:** H I absorption ( $0.4 < z < 1.0$ ) and emission ( $0 < z < 0.2$ ) lines ( $\sim 700$  to  $1400$  MHz), CO(1–0) emission lines ( $z \sim 0.2$ ,  $\sim 95$  GHz), C, L, K, Q, W, D-band VLBI ( $\sim 4.3$  to  $129$  GHz), Optical long-slit spectroscopy and imaging

- **ASKAP:** Australian SKA Pathfinder (200+1200 hrs, Project Scientist of AS109/AS209, 2019 – 2028)
- **Gemini:** GMOS-South, Long-slit spectroscopy & Imaging (1.94 hours, PI of GS-2024B-FT-215)
- **KVN:** Korean VLBI Network (90 hours, PI of 2022A\_0286)
- **ATCA:** Australia Telescope Compact Array (11.5 hours, PI of CX473 + Duty astronomer)
- **WSRT:** Westerbork Synthesis Radio Telescope, 72-m configuration (96 hours, PI of R14A011)
- **JVLA:** Karl G. Jansky Very Large Array, D-configuration (7.5 hours, PI of 14A-304)
- **GMRT:** Giant Metrewave Radio Telescope (20 hours, PI of 25\_034)
- **Co-I projects:** **VLBA** (24A-059), **LBA** (V631), **e-MERLIN** (CY12212), **MeerKAT** (MKT-22047, MKT-20135), **GMRT** (43\_078, 43\_076, 40\_096, 40\_092, 36\_002), **ATCA** (C3515, C3392), **NRO-45m** (CG121032, CG112025)

## TEACHING

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**SSP research supervisor at the University of Sydney:** Physics Special Studies Program – Astro (PHYS2921; Semester 1 2023) - Daniel Jian (USyd)

**Course lecturer/unit coordinator at the University of Sydney:** Data Science in Astronomy: Algorithms (OLET1618; Semester 1, Semester 2 2020)

**Teaching Assistant at Yonsei University;** Astrophysics II (Fall 2012), Radio astronomy (Spring 2012), Understanding of Space (Fall 2011, Spring 2011)

## SUPERVISING/STUDENT MENTORING EXPERIENCE

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**Undergraduate thesis project supervising:** Soyeong Kim (Kyung Hee Univ.), 2024 – Present

**CSIRO summer student program co-supervising:** Lan Tran (UNSW), 2021 – 2022 Summer (Aus)

**FLASH team's PhD student project mentoring:** Renzhi Su (SHAO, now Zhejiang Lab), Simon Weng (USyd), Emily Kerrison (USyd), 2019 – Present

## ORAL PRESENTATIONS (SELECTED, LAST 5 YEARS)

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### Lectures/Colloquia/Invited Talks:

- **KHU Astro Colloquium, Kyung Hee University, Yongin, South Korea, Sep 2024** (upcoming, in-person)
- **Radio Summer School & Telescope User's Meeting, KASI, South Korea, Aug 2024** (lecturer, in-person)
- **SNU Astro Colloquium, Seoul National University, Seoul, South Korea, Mar 2024** (in-person)
- **ATNF Colloquium, CSIRO-Marsfield, Sydney, Australia, Sep 2023** (in-person)
- **2023 ACAMAR workshop: Gas in galaxies, Perth, Australia, July 2023** (invited, in-person)
- **ATNF Co-learnium, CSIRO-Marsfield, Sydney, Australia, Jan 2021** (remote)

### Contributed Talks:

- **2024 Winter SKA-Korea workshop, Daejeon, South Korea, Dec 2024** (in-person)
- **IAU General Assembly 2024 S392 & FM5, Cape Town, South Africa, Aug 2024** (in-person)
- **Meeting of the Korean Astronomical Society, Yeosu, South Korea, Apr 2024** (SKA special session, in-person)
- **2023-2024 Winter SKA-Korea workshop, Busan, South Korea, Feb 2024** (in-person)
- **Survey Science Group workshop 2024, Jeongseon, South Korea, Jan 2024** (in-person)
- **The evolution of gas in and around galaxies workshop, Stanley, USA, July 2023** (in-person)
- **Astronomical Society of Australia - ASM, Australia, July 2023/July 2021** (in-person/remote)
- **IAU General Assembly 2022 Division J & S373, Busan, South Korea, Aug 2022** (in-person/e-talk)
- **Sifa Morning Tea talk, University of Sydney, Sydney, Australia, Mar 2022/June 2021/July 2020** (remote)
- **ASTRO 3D Science Meeting (2022/2021), Australia, June 2022/Sep 2021** (in-person/remote)
- **East-Asia SKA workshop, Japan, May 2021** (remote)
- **Meeting of the American Astronomical Society (236/233rd), USA, June 2020/Jan 2019** (remote/in-person)

## GRANTS, AWARDS, AND SCHOLARSHIPS

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**2024 Excellence Award for Young Scientists:** Korean Federation of Women's Science & Technology Associations, 2024  
**G-LAMP Fellowship:** NRF grant of Korea funded by the Ministry of Education, 2023 – Present  
**IAU Travel Grant:** XXXII IAU General Assembly (Cape Town, South Africa), 2024  
**Slogan Contest – award:** 2024 Summer Signboard Slogan Contest, Shinhan Card, 2024  
**Slogan Contest – award:** KAS 60th Anniversary Slogan Contest, Korean Astronomical Society, 2024  
**WISSET Research Travel Grant:** Korea Foundation for Woman in Science/Engineer/Technology, 2018  
**Student Poster Competition:** "Yonsei Astro Poster Jamboree", Yonsei University, 2017  
**Endeavour Research Fellowship:** Australian Government, 2016 – 2017  
**BK21/BK21 Plus Scholarship:** National Research Foundation of Korea, 2011 – 2012, 2013 – 2016  
**Teaching/Research Assistantship:** Yonsei University, 2011 – 2012  
**Undergrad Scholarships from Yonsei University:** Honors (2010), Truth Scholarship (University Designated; 2009 – 2010), Yonsei Internal/External Scholarship (2009)

## SERVICE AND OUTREACH (SELECTED)

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### Professional:

- **Journal reviewer:** Monthly Notices of the Royal Astronomical Society
- **ATNF TAC:** Australia Telescope National Radio Facility Time Assignment Committee, 2023 – Present
- **Session chair:** "SNU ARC 3rd H. S. Yun Astronomy Workshop", 2024
- **Science organizer:** SOC for "2024 SKA-Korea Summer Science Meeting", 2024
- **Session chair:** "ACAMAR workshop: Gas in galaxies", 2023
- **Session chair and student talk judge:** "2023 Astronomical Society of Australia - ASM", 2023
- **Local organizer:** Co-organizer of weekly SIFA Morning Tea, University of Sydney, 2022
- **Session chair:** "IAU General Assembly: Division J Galaxies and Cosmology", 2022
- **Science organizer & Session chair:** SOC/Session chair for "2021 ASTRO 3D Science Meeting", 2021
- **Local organizer:** University of Sydney node coordinator for ASTRO 3D NSW Monthly Meeting, 2021
- **Duty Astronomer:** ATCA duty astronomer, Oct 2020
- **Local organizer:** LOC for "SKA in Seoul on H I Science" conference, 2015

### Mentoring/Outreach/Volunteering:

- **Career exploration activities for students:** Woosung High School Students, 2024
- **Mentoring for juniors:** Korea Woman in Science/Engineer/Technology (WISSET), 2018 – 2019
- **Global mentoring for career development:** WISSET and General Electrics, 2018
- **Volunteering (translation/editing):** Africa-Asia Destitute Relief Foundation (ADRF), 2015
- **Public outreach:** Yonsei astronomy public outreach activities ("Byul-a-rum"), 2008 – 2009
- **Volunteering (teaching):** Chungam community child center, 2007 – 2008

## PROGRAMMING SKILLS

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**Languages:** Python, HTML, Fortran, LaTeX, IDL (basic), Matlab (basic), C (basic)

**Radio observational data processing/analysis tool experiences:** **CASA** (for JVLA/ASKAP/e-MERLIN data), **AIPS** (GMRT/KVN/JVLA), **MIRIAD** (WSRT/ATCA), **Karma** (GMRT/JVLA/WSRT), **GIPSY** (JVLA/GMRT), **SoFiA** (MeerKAT), **FLASHfinder** (ASKAP/MeerKAT), **CARTA** (ASKAP)

**Other astronomical data analysis tools:** IRAF, SAOImageDS9, TOPCAT, DisPerSE, Fv

## COLLABORATIONS/MEMBERSHIPS (ALPHABETICAL ORDER)

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**ASKAP–FLASH** (First Large Absorption Survey in H I) • **ASKAP spectral line WG** (ASKAP spectral line and data validation working group) • **ASTRO 3D** (The ARC Centre of Excellence for All Sky Astrophysics in 3 Dimensions – Alumni) • **BUDHIES** (Blind Ultra Deep H I Environmental Survey) • **SKAO H I SWG** (SKAO H I Science Working Group - H I science) • **SKA-KOREA WG** (SKA-KOREA Science Working Group - H I science) • **VERTICO** (Virgo Environment Traced In CO) • **VIVA** (VLA Imaging of Virgo in Atomic gas) • **ASA** (Astronomical Society of Australia) • **IAU** (International Astronomical Union Junior Member) • **KAS** (Korean Astronomy Society) • **WISSET** (Korea Foundation for Woman in Science/Engineer/Technology)