

# Yurina Nakazato

Curriculum Vitae (last updated December 2024)

## Address:

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## Research Interests

Galaxy formation and evolution, cosmology, first stars and galaxies, cosmological simulations, multi-wavelength observations

## Education

- Apr. 2023 - present **Ph.D. student, The University of Tokyo**, Japan  
(Ph.D. expected, August 2025)
- Apr. 2021 - Mar. 2023 **M.S. in Physics, The University of Tokyo**, Japan  
Thesis: *Formation and evolution of star clusters and galaxies in the early Universe*  
Advisor: Naoki Yoshida  
President's Award (1/3000), Dean's Award (1/128)
- Apr. 2017 - Mar. 2021 **B.S. in Physics, The University of Tokyo**, Japan

## Fellowships and Awards

- Feb. 2024 Outstanding Poster Award at the International Symposium on Quantum Electronics 2024
- Apr. 2023- present JSR fellowship
- Apr. 2023- present Japan Society for Promotion of Science (JSPS) Research Fellow, DC1
- Mar. 2023 The School of Science Encouragement Award
- Mar. 2023 The University of Tokyo President's Award
- Mar. 2023 The Excellence Award for Qualifying Exam
- Oct. 2021- present The International Graduate Program for Excellence in Earth-Space Science (IGPEES), the University of Tokyo
- Aug. 2021 Best Oral Presentation Award at 51th astronomical meeting for junior researchers

## Leadership & Outreach

- Jun. 2023 Organizer of Get-Together Event for Women in STEM, the University of Tokyo
- Jul. 2022 Public Talk at Women in STEM, School of Science, the University of Tokyo
- Dec. 2019 Rikejo Initiative, the University of Tokyo
- Oct. 2019 Invited talk at Dow Chemical Company, Tokyo, Japan

## Grants

- Apr. 2023-Mar.2026 Evolution of first galaxies with multi-wavelength observations and numerical simulations, 4.2M JPY (30K USD), JSPS Grant-in-Aid for Early-Career Scientists, No. 23KJ0728
- Apr. 2023-Mar.2026 Grand Aid from JSR fellowship, 3M JPY (21K USD)

## Talks at Conferences and Workshops (Selected)

**total: 25 (24 oral talks, 9 peer-reviewed talks)**

- Sep. 2024 **ILR workshop 2024 @Osaka: From Galaxy Formation to Supermassive Black Holes**, Osaka, Japan
- Aug. 2024 **IAUS391**, Cape Town, South Africa
- Jul. 2024 **European Astronomical Society (EAS) Annual meeting 2024**, Padova, Italy
- Feb. 2024 **The International Symposium on Quantum Electronics 2024**, poster, The University of Tokyo, Japan
- Nov. 2023 **Resolving the Extragalactic Universe with ALMA & JWST**, Waseda Univ., Japan
- Jul. 2023 **Shedding new light on the first billion years of the Universe**, Marseille, France
- Sep. 2022 **The 9th East Asian Numerical Astrophysics Meeting (EANAM9)**, Okinawa, Japan
- Aug. 2022 **Star Formation in Different Environments (SFDE) 2022**, Quy Nhon, Vietnam
- Jul. 2022 **National Astronomy Meeting (NAM) 2022**, online, hosted by the University of Warwick
- Nov. 2021 **IAU Symposium 362: The predictive power of computational astrophysics as a discovery tool**, online
- Aug. 2021 **RESCEU Summer School 2021**, online, hosted by the University of Tokyo

### **Seminars (Selected)**

- Dec. 2024 **One-day workshop on high-z cosmological simulations**, The University of Tokyo
- Jul. 2024 **Special seminar**, JSR corporation, Online
- Apr. 2024 **Special seminar**, Scuola Normale Superiore, Italy
- Dec. 2024 **Special seminar**, Universidad Autónoma de Madrid, Spain
- Dec. 2024 **Special seminar**, Centro de Astrobiología, (CAB, CSIC-INTA), Spain
- Aug. 2023 **One-day workshop on galaxies in the era of JWST/ALMA**, The University of Tokyo
- Mar. 2023 **Supersonic Project: Collaboration meeting**, UCLA, US
- Feb. 2023 **Special seminar**, UCLA, US

### **Coverage in Media**

**Hunting Faint Galaxies with JWST as a Test for the Dark Matter Model** based on Williams et al. 2024  
 - *Bright galaxies put dark matter to the test*, UCLA

**The core of the most distant galaxy protocluster observed by JWST & ALMA** based on Hashimoto et al. 2023  
 - *The Strong Tag Team of the James Webb Space Telescope and ALMA Captures the Core of the Most Distant Galaxy Protocluster*, Kavli IPMU, Tsukuba Univ., Waseda Univ., Nagoya Univ.

### **Teaching & Professional Service**

#### **Teaching**

- Apr. 2021-Aug. 2021 Teaching Assistant of Fluid Mechanics, the University of Tokyo
- Apr. 2019- Jan. 2024 Language Assistant, International Lounge, the University of Tokyo

#### **Professional Service**

- Dec. 2024 Organizer, One-day workshop on high-z cosmological simulations, The University of Tokyo, Tokyo, Japan
- Aug. 2023 Organizer, The 53rd Summer School on Astronomy and Astrophysics, The University of Tokyo, Tokyo, Japan
- Mar. 2023 Workshop Organizer, Astrophysics Workshop for Young Researchers, The University of Tokyo, Tokyo, Japan

### **Proposals**

**co-Investigator on ALMA proposals**

4. 2023.1.00843.S, PI: Y.Tamura, 15.6h  
*Disentangling the ionization structure of HII regions in a density-bounded Ly $\alpha$  emitter in the Reionization Era*
3. 2023.1.00193.S, PI: Y. Fudamoto, 17.3h  
*[CII] 158 $\mu$ m emission line and dust observation of the most distant known overdensity of galaxies at  $z = 7.88$*
2. 2023.1.00235.S, PI: Y. Fudamoto, 10.0 h  
*The ALMA-JWST synergy: [OIII]88 $\mu$ m and [CII]158 $\mu$ m emission line observations of  $z = 9.51$  galaxy identified by JWST*
1. 2023.1.01362.S, PI: Y. Tamura, 25.9 h  
*Pandora's ELPIS: The Emission-Line Protocluster Imaging Survey of the furthest overdensity beyond Pandora's Cluster*

## Research & industry experience

- Apr. 2024 - Jul. 2024     **Visiting Student at Scuola Normale Superiore di Pisa**  
- Host researcher is Prof. Andrea Ferrara.
- Nov. 2023 - Dec. 2023     **Visiting Student at Universidad Autónoma de Madrid**  
- Host researcher is Prof. Daniel Ceverino.  
- Worked on formation and evolution of clumpy galaxies by using FirstLight simulation
- Feb. 2023 - Mar. 2023     **Visiting Student at UCLA**  
- Host researcher is Prof. Smadar Naoz.  
- Worked on Supersonic Project [link]
- Jun. 2020 - Mar. 2021     **Study and Visit Abroad Program**  
- Funded by the faculty of science, the University of Tokyo  
- Online research internship at Naoz lab, UCLA
- Dec. 2019 - Jan. 2020     **Online Language Exchange Program - Utokyo & TUM-**  
- Participated in an online international exchange program with students from Technical University of Munich
- Jun. 2019 - Sep. 2019     **UTokyo Global Internship Program**  
- Funded by DAIKIN, a company leading air conditioning and refrigeration.  
- Two-month workplace training at DAIKIN Japan and two-week research internship at DAIKIN Europe in Belgium. Business proposal for food loss and integrated solution of air conditioning and refrigeration.
- Aug. 2019     **Summer School of Particle Physics and Nuclear Physics**  
- Funded by the High Energy Accelerator Research Organization.  
- Experiment of measuring muon decay time and observing Larmor Precession and Single-Spin Asymmetries. Made the final presentation and poster session.
- Aug. 2019     **Nanotechnology Platform Student Training Program**  
- Funded by National Institute for Materials Science.  
- Five-day research program at Spring-8, the world's largest third-generation synchrotron radiation facility. Conducted X-ray photoelectron spectroscopy (XPS) experiments and data analysis. Made a presentation at the University of Tokyo in September.
- Feb. 2019- Mar. 2019     **Undergraduate Research Assistant, TOMODACHI STEM Program**

- Funded by U.S.-Japan Council.
- Five-week science & engineering research internship at Gerts lab, Rice University, Houston. Researched and analyzed the heavy iron collision data of STAR experiment conducted at BNL.
- Final week study tour to Washington, DC including site visits to the Society for the Promotion of Science, JAXA, U.S.-Japan Council, and Women in STEM Workshop at Lehigh University.

Jul. 2014- Aug. 2014

#### **Okinawa Global Leaders Program**

- Funded by Okinawa Prefectural Board of Education.
- Three-week program to introduce students to key concepts in intercultural communication and global leadership.

### **Active collaborations**

- Supersonic Project
- FirstLight simulations
- Reionization and the ISM/Stellar Origins with JWST and ALMA (RIOJA, JWST GO1840)

### **Competencies**

Scientific programming : Python, C++, Fortran, Latex  
 Simulation software : SKIRT, AREPO, ART  
 Astrophysics tool : CLOUDY, SKIRT, Astrodendro, A-SLOTH

### **References**

Prof. Naoki Yoshida (current supervisor), The University of Tokyo, [naoki.yoshida@ipmu.jp](mailto:naoki.yoshida@ipmu.jp)  
 Prof. Andrea Ferrara, Scuola Normale Superiore, [andrea.ferrara@sns.it](mailto:andrea.ferrara@sns.it)  
 Prof. Smadar Naoz, University of California, Los Angeles, [snaoz@astro.ucla.edu](mailto:snaoz@astro.ucla.edu)