Lilianne Nakazono

Full name	Lilianne Mariko Izuti Nakazono (L. Nakazono)
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Website	https://marixko.github.io
Languages	Portuguese (native), English (fluent), Spanish (Intermediate), Japanese (Intermediate)

RESEARCH EXPERIENCE

Doctorate program in Astronomy

Instituto de Astronomia, Geofísica e Ciências Atmosféricas, Universidade de São Paulo   2018
São Paulo, Brazil
Advisor: Prof. Claudia Mendes de Oliveira (IAG-USP)

Thesis: "Classification and redshift estimation of new quasars in photometric surveys, using S-PLUS as study case"
Our object classifier is the current primary source to photometrically select stars, quasars or galaxies in S-PLUS DR2, DR3, and DR4. During these years, I had experience with querying, cross-matching and/or analyzing data from S-PLUS, SDSS, WISE, GAIA, GALEX, GAMA, and ALHAMBRA surveys. I have been working on this project since my first year of undergraduate in Astronomy (2014), being supervised by Prof. Nina T. S. Hirata from the Computer Science department of IME-USP at that time.

Exchange program at University of Washington (12 months)
Seattle, US   2022
Advisor: Prof. Željko Ivezić (UW)

Exchange program at University of Florida (4 months)
Gainesville, US   2017 / 2018
Advisors: Prof. Stephen Eikenberry (UF), Prof. Anthony Gonzalez (UF)

EDUCATION

Bachelor in Astronomy

Instituto de Astronomia, Geofísica e Ciências Atmosféricas, Universidade de São Paulo   2016
São Paulo, Brazil

Bachelor in Statistics

Instituto de Matemática e Estatística, Universidade de São Paulo   2013
São Paulo, Brazil

AWARDS

- **Top class student in the "Observational Astronomy" graduate course, 2018**
  Honored by Jorge Luis Melendez Moreno (IAG-USP)

- **Prize of Excellence (team member), 2016**
  Asia Supercomputer Community (ASC16)

- **Best undergraduate research in Astronomy, 2015**
  Instituto de Astronomia, Geofísica e Ciências Atmosféricas, Universidade de São Paulo, São Paulo, Brazil

SERVICE & OTHERS

- **Head of Research & Development at Turing USP, 2022 - present**
  Turing USP has 60+ members with different backgrounds from Universidade de São Paulo. Our goal is to disseminate, study, develop and apply Machine Learning ([GitHub Organization](#))

- **Coordinator of the development group for the S-PLUS logo and visual identity, 2021-2022**

- **Project manager and web designer of the S-PLUS collaboration, 2020 - present**

- **Slack creator and manager of the S-PLUS collaboration, 2019 - present**

- **Volunteer staff at IAUS 359: Galaxy Evolution and Feedback Across Different Environments, 2020**

- **LOC of FIRST LIGHT Advanced School, 2019**

PROGRAMMING & SKILLS

- Major contributions to the splusdata package (Python)

- Python, R, SQL, ADQL, Fortran 95, C, Julia

- TOPCAT, STILTS, IRAF, Aladin, DS9

ACCEPTED TIME PROPOSALS

- **[PI] SOAR telescope, 2018**
  8 hours with Goodman spectrograph

- **[PI] GEMINI-South telescope, 2018**
  20 hours with GMOS-S spectrograph

INVITED TALKS

- **Panel discussion: Practical Problem Solving — including Interpretability**
  IAU Symposium 368 "Machine Learning in Astronomy: Possibilities and Pitfalls"
  XXXIst IAU General Assembly, Busan. Rep. of South Korea, 2022

- **Lecturer on the topic of Machine Learning in Astronomy** ([GitHub repository](#))
  IX La Plata International School on Astronomy and Geophysics, La Plata, Argentina, 2020

MAIN CONTRIBUTED TALKS

- **"Assessing the impact of narrow-band information in photometric surveys"**
  iid2022: Statistical Methods for Event Data Illuminating the Dynamic Universe, Alabama, United States of America, 2022

- **"How narrow-band surveys can provide a better quasar selection?"**
  Quasars During Reionisation (SAZERAC), online, 2020

- **"Classification and photo-zs of quasars using machine learning in photometric observations from S-PLUS"**
  XLIII annual meeting of Sociedade Astronômica Brasileira, Universidade de São Paulo, Brazil, 2018

CONFERENCE ATTENDANCES

- AstroHackWeek, Max Planck Institute for Astronomy, Heidelberg, Germany, 2022

- XXXIst IAU General Assembly, Busan, Rep. of South Korea, 2022

- IAUS 359: Galaxy Evolution and Feedback Across Different Environments, Bento Gonçalves, Rio Grande do Sul, Brazil, 2020

- FIRST LIGHT Advanced School, IAG-USP, São Paulo, Brazil, 2019

- AstroHackWeek, Lorentz Center, Leiden, The Netherlands, 2018

TEACHING EXPERIENCE

- I have been supervising an Astronomy undergraduate student (Raquel Ruiz) since 2020, who has been granted a FAPESP fellowship to estimate quasar photo-zs with Bayesian Neural Networks. In 2022 she presented this work as contributed talks at an international conference (IAU Symposium 368) and at a national conference (XLV annual meeting of Sociedade Astronômica Brasileira)

- I co-supervised a Statistics undergraduate student (Gabriela Soares) in 2022 and I have been co-supervising one Computer Science undergraduate student (Gabriel Perin) since 2022

- I gave two Machine Learning lectures/hands-on for undergraduate and graduate students in my home institute in 2017 and 2018. I also gave one hands-on activity for graduate students at the University of Florida in 2017 (GitHub repository)

- I was a teaching assistant for the undergraduate courses "Numerical methods in Astronomy", "Introduction to Probability and Statistics II", and the undergraduate/graduate course "Astronomical databases and Astrostatistics in the Big Data era"

OUTREACH ACTIVITIES

Here I list only a few ones that I have the fondest memories of.

- I gave a 4-hour introductory lecture + hands-on on Machine Learning for cis/trans women and nonbinary people in 2019. The workshop was organized by PyLadies São Paulo, a non-profit organization. (GitHub repository)

- I participated in an event called "Ask a scientist", where a couple of scientists sat at tables on the busiest street in Sao Paulo and anyone could join the table to ask us any questions about our fields. This event happened in 2019 and was organized by Via Saber, a non-profit organization.

- I was a visitor guide at the Observatório Abrahão de Moraes from Universidade de São Paulo in 2019. One particular event that I idealized, organized and hosted was an Astronomy Trivia for kids.

PRESS & INTERVIEWS

- [EN] [Funding crisis at Brazilian science agency could leave 80,000 researchers and students without pay](#), Science.org
- [PT-BR] [Astrônomos descobrem estrela que desafia modelos atuais de evolução do Universo](#), Jornal da USP

PUBLICATIONS

Major-contributed (refereed)

- Nakazono, L., et al., "On the discovery of stars, quasars, and galaxies in the Southern Hemisphere with S-PLUS DR2", Monthly Notices of the Royal Astronomical Society, vol. 507, no. 4, pp. 5847–5868, 2021. https://doi.org/10.1093/mnras/stab1835.
- [co-author] Almeida-Fernandes, F., et al., "Data Release 2 of S-PLUS: Accurate template-fitting based photometry covering 1000 deg^2 in 12 optical filters", Monthly Notices of the Royal Astronomical Society, vol. 511, no. 3, pp. 4590–4618, 2022. https://doi.org/10.1093/mnras/stac284.
- [co-author] Lima, E. V. R., et al., "Photometric redshifts for the S-PLUS Survey: Is machine learning up to the task?", Astronomy and Computing, vol. 38, 2022. doi:10.1016/j.ascom.2021.100510.
- [co-author] Mendes de Oliveira, C., et al., "The Southern Photometric Local Universe Survey (S-PLUS): improved SEDs, morphologies, and redshifts with 12 optical filters", Monthly Notices of the Royal Astronomical Society, Volume 489, Issue 1, October 2019, Pages 241–267, https://doi.org/10.1093/mnras/stz1985.

Minor-contributed (refereed)

- [co-author] Werner, S., et al., "S-PLUS DR1 galaxy clusters and groups catalogue using PzWav", submitted to Monthly Notices of the Royal Astronomical Society.
- [co-author] Jeram, S., et al., "An Extremely Bright QSO at z = 2.89", The Astrophysical Journal, vol. 899, no. 1, 2020. https://doi.org/10.3847/1538-4357/ab9c95.
- [co-author] Molino, A., et al., "Assessing the photometric redshift precision of the S-PLUS survey: the Stripe-82 as a test-case", Monthly Notices of the Royal Astronomical Society, Volume 499, Issue 3, December 2020, Pages 3884–3908, https://doi.org/10.1093/mnras/staa1586.

Non-refereed

- [co-author] Eikenberry, S., et al., "Astro2020: Decadal Survey on Astronomy and Astrophysics", APC white papers, no. 137; Bulletin of the American Astronomical Society, Vol. 51, Issue 7, id. 137, 2019, https://arxiv.org/abs/1907.08273.