Alex I. Malz

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Ruhr-Universität Bochum (RUB)
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Appointments

Postdoctoral Research Fellow, German Centre for Cosmological Lensing 2019–
Visiting Scientist, Lawrence Livermore National Laboratory 2021–

Education & Academic Fellowships

PhD 2020, Physics, New York University (NYU) Graduate School of Arts and Sciences (GSAS)
Thesis: Probabilistic analysis methods for cosmology using uncertainty-dominated photometric data Advisor: David W. Hogg
GSAS Ted Keusseff Fellow, 2018-19; GSAS MacCracken Fellow, 2014-18

MS 2014, Astronomy & Astrophysics, Pennsylvania State University (PSU) Braddock/Roberts Fellow 2012-13

BS 2011, Physics & History, California Institute of Technology (Caltech) President's Scholar, 2006-11

Awards & Honors

Vera C. Rubin Observatory Legacy Survey of Space and Time (LSST)
Dark Energy Science Collaboration (DESC) Builder 2020–
Finalist, Dance Your Ph.D. contest, 2019
Department of Energy Office of Science Graduate Student Research SCGSR Fellow, 2017

Leadership & Scientific Collaborations

Kilo-Degree Survey (KiDS) Member, 2019–
LSST Informatics & Statistics Science Collaboration (ISSC) Member, 2019–
Cosmostatistics Initiative (COIN) Member, 2018–
DESC Full Member, 2016–; Photometric Redshifts Working Group Convener, 2019-21
Collaboration Council, 2018-20; Membership Committee 2017-19

Grants

LSST Corporation (LSSTC) Enabling Science 2021
Organizer, ISSC Ambassadors 6 of 8 applications for interdisciplinary student research funded
PI, Stress-testing multimodal photometric redshift posteriors in the extrapolative regime
Co-I, LSSTC Enabling Science 2019, DESC Cluster Lensing Mass Modeling Sprint Week at RUB
Co-I, LSSTC Enabling Science 2018, DESC Cluster Lensing Mass Modeling Sprint Week at CMU
Co-I, NSF 2015, AST-1517237: New Probabilistic Methods for Observational Cosmology

Professional Service

Hackathon Leader, From Quarks to Cosmos (Carnegie Mellon University Summer 2021)
Tutorial Co-organizer, Bayesian Deep Learning for Cosmology and Gravitational Waves
(Astroparticle and Cosmology Laboratory Université de Paris, Winter 2020)
Workshop Co-organizer, Photometric LSST Astronomical Time-Series Classification Challenge
(PLAsTiCC) (NYU, Spring 2018)
Local Organizing Committee member, Astro Hack Week (NYU, Fall 2015)

Invited Talks

2021

    Ludwig-Maximilians-Universität Munich, Origins Cluster Data Science Laboratory Seminar

    American Astronomical Society #238 Meeting-in-a-Meeting, Machine Learning in Astronomy

    Dark Energy Spectroscopic Instrument (DESI) Collaboration, Machine Learning Seminar

    Princeton University, Institute for Advanced Study Cosmology Lunch Talk

    Machine Learning Club, Panelist

2020

    University of Arizona, Dark Energy School, LSST-DESC Meeting

2019

    Berkeley Center for Cosmological Physics, Accurate Lensing in the Era of Precision Cosmology

    Royal Observatory Edinburgh, Institute for Astronomy Seminar

    University of Washington, Data Intensive Research in Astronomy and Cosmology Seminar

2018

    Lawrence Livermore National Laboratory, Cosmology Seminar

    Lawrence Berkeley National Laboratory, Berkeley Center for Cosmological Physics Seminar

    Leiden University, Astronomy Seminar

    University of Leiden Lorentz Center, Colours of the Universe

    Carnegie Mellon University, ML + Time Domain Workshop

    Laboratoire de Physique Corpusculaire de Clermont, Seminar

    Laboratoire de Physique Subatomique et de Cosmologie de Grenoble, Colloquium

2017

    State University of New York at Stony Brook, Astronomy Colloquium

    University of Toronto, Canadian Institute for Theoretical Astrophysics Seminar

    Stanford University, Kavli Institute for Particle Astrophysics and Cosmology Tea

    Tohoku University, Photo-z Workshop for Large Surveys

2016

    University College London, Astronomy Seminar

    Imperial College London, Astronomy Seminar

    University of Pittsburgh, Photometric Redshifts for LSST

Research Supervision & Mentoring

2021–: Nicola Hunfeld; RUB, MS 2022

2021: Natalia Stylianou; University of Leicester, BS 2022

2018: David Mykytyn, Dave Perrett, Ted Singer & Zora Tung; non-academic professionals

2018: Lia Lubit & Marin Hyatt; Hunter College High School 2020

Public outreach

Judge, New York City Science and Engineering Fair finals event Spring 2021

Juror, German Young Physicists' Tournament North Rhine-Westphalia Winter 2021

Contestant, Dance Your Ph.D. youtu.be/vKs3PYqZWg8 Winter 2019

    Produced, directed, choreographed, and danced an entertaining explanation of Malz & Hogg (2021)

Math Circle Speaker at Bridge to Enter Advanced Mathematics beammath.org Summer 2018

    Designed and taught applied geometry lessons in the context of astronomy

Judge, New York City Science and Engineering Fair finals event Spring 2018

Guest Speaker, Hunter College High School Science Club Spring 2016

Judge, Pennsylvania Junior Academy of Science finals event Spring 2013

Outreach Developer & Facilitator, PSU AstroFest Summers 2012, -13, -14

    Created and implemented tie-dye-based activities teaching astronomy concepts