

SUMEET KULKARNI

Graduate Student, The University of Mississippi

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EDUCATION

Doctor of Philosophy (Ph.D.) Candidate, Physics

The University of Mississippi

August 2017 – Present

Oxford, Mississippi

Bachelor of Science & Master of Science

Indian Institute of Science Education and Research (IISER)

August 2012 – May 2017

Pune, India

SCIENCE WRITING

Positions

- Science Journalism Intern, **India Bioscience** (Summer 2019)
I got introduced to the craft of science writing and wrote 3 News and 1 Feature article during this 3-month remote internship with India's leading life sciences communication outlet.
- Regular Author and Editor, **Astrobites** (January 2020-present)
I am a regular author for Astrobites, a team of astronomy graduate students who write and edit science summaries aimed at undergraduate students interested in learning more about the latest research in our field.

Media Clips

- Scientific American**: Mind the [Mass] Gap (October 28, 2019)
- I,Science**: 'Extreme Energies: Gravitational Waves', a guest feature for the Autumn '19 edition of the science magazine of Imperial College, London (December 2019)
- SciWorthy**: 'Using Gas Bubbles in Lava to Predict Ancient Air Pressure' (March 24, 2018)
- IndusDaily**: A short series of blog posts on Gravitational Wave Astrophysics (May 2015-May 2017)

SCIENCE COMMUNICATION

Oxford Science Café

December 2018-present

Oxford, MS, USA

- I co-organize the Oxford Science Cafe: monthly public talks and conversations about science for the local community in Oxford, the only event of its kind in north Mississippi.
- Besides emceeing for the main event, I identify and invite potential speakers, help secure funding and publicize it.

Ssippin' Science Podcast

March 2020-present

Podcastland

- I am the creator and host of "Ssippin' Science", a podcast that aims to share the stories we hear at the Oxford Science cafe to a broader audience. I pick the big picture and quotes from the public talks at the science cafe, and add my narrative around it to craft concise science-y soundbites.
- Available to listen on **Spotify**, **Apple Podcasts** or **Google Podcasts**.

FameLab

Winner, 3rd prize

February 2017

Cheltenham, UK

- Famelab: 'The world's biggest Science Communication competition' challenges participants to Communicate Science in 3 minutes without using any visual aids
- My presentation titled "Cosmic Fireworks" explained one of the latest discoveries in my field: how two neutron stars collide in a *Kilonova* explosion, using a pair of balloons filled with confetti. Winning the 3rd prize here gave me a chance to represent India at the Cheltenham Science Festival
- Story in *The Times of India*.

Outreach

- Editor of the Humans of LIGO blog: Humans of LIGO is an initiative which celebrates individuals in the LIGO Scientific Collaboration, comprising of more than 1300 scientists and engineers from over 100 institutions and 18 countries worldwide. I interview my fellow researchers and create and edit their profiles for the blog.
- Halloween spooky physics night: I dress up in nerdy costumes, serve liquid nitrogen candy and conduct physics demos like 'the pumpkin drop' at this family-friendly event attended by over 300 locals every year at the UM Department of Physics and Astronomy

Public Talks

- The British Council's *Cafe Scientifique*: 'The Rise of Artificial Intelligence in Astronomy' at the British Library, Pune to an audience of around 60. Cafe Scientifique provides a unique forum for the discussion of scientific issues in a way that is much more relaxed, informal and accessible than a public lecture. (January 5, 2018)

TEACHING EXPERIENCE

Teaching Assistant, Astronomy

📅 August 2017-present

- I teach the lab component of the Astronomy 103/104 courses for 4 semesters and 11 class sections till date. The labs have an emphasis on teaching over grading
- I conduct observation and astrophotography imaging sessions using the 17" PlaneWave CDK reflector at the Kennon Observatory, The University of Mississippi
- Astronomy open house: For over two years, I have been conducting star-gazing and planet-hunting sessions for the monthly open house at the Kennon observatory, The University of Mississippi.

RESEARCH EXPERIENCE

NNETFIX: A Neural Network to 'fix' GW signals affected by short duration glitches.

📅 January 2018 – April 2019

📍 University of Mississippi

- Developed a Multi-layered Perceptron (MLP)-based Neural Network to reconstruct Gravitational Wave signals coincident with short duration noise transients or 'glitches' in LIGO data.
- Presented as a contributed talk in the 2019 APS April meeting; publication under development.

Random projections in Gravitational Wave searches of compact binaries

DOI: <https://doi.org/10.1103/PhysRevD.99.101503>

📅 May 2016 – May 2017

📍 IUCAA, Pune

- Applied 'Random Projections', a powerful dimensionality reduction technique to improve the computational efficiency of Gravitational Wave searches from compact binaries of neutron stars or black holes
- Published in *Physical Review D, Rapid Communication*

Photometry and catalog of coadded images for the Catalina Real-time Transient Survey (CRTS)

📅 Spring 2016

📍 IUCAA, Pune

- Created a webpage to serve CRTS images using Python's FLASK toolkit. It is online at <https://crts.iucaa.in/>

MULTIMEDIA SKILLS

Microsoft Office Suite

Plotting: Python (matplotlib)

Graphics: Adobe Illustrator, GIMP

LaTeX

Audio/Video: Audacity, Adobe Premier Rush

Web development: HTML, Python FLASK

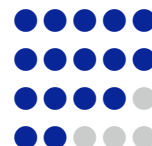
LANGUAGES

English

Marathi

Hindi

French



SCIENCE COMMUNICATION TRAINING AND WORKSHOPS

Conference for Science Communication (ComSciCon)-AIP

📅 September 2019

📍 College Park, MD, USA

- Presented a poster on the Humans of LIGO project

ComSciCon-Atlanta

📅 March 2020

📍 Athens, GA, USA

The Cheltenham Science Festival

📅 June 2017

📍 Cheltenham, UK

EURAXESS Communicating Science Out Of The Lab

📅 August 2015

📍 Mumbai, India

American Physical Society (APS) Annual Meeting

📅 April 2019

📍 Denver, CO, USA

LIGO Open Data Workshop

📅 March 2018

📍 Pasadena, CA