# Sourav Majumder

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## Reserach Interests

Quantum hybrid devices, Superconducting qubits

## Education

**Indian Institute of Science (IISc), Bengaluru**
**Graduate Student in Physics** 2017 - *Present*

**Indian Institute of Science (IISc), Bengaluru**
**M.S. Physics** 2015 - 2017

**Ramakrishna Mission Residential College (RKMRC), Narendrapur**
**B.Sc. (Hons.) Physics** 2012 - 2015

## Employment

**Graduate Student**
**International Centre for Theoretical Sciences (ICTS-TIFR), Bengaluru**
*Mentored by Prof. Parameswaran Ajith* Aug 2018 - *Present*
*Member of the LIGO Scientific Collaboration and the LIGO-India Scientific Collaboration*

**Summer Research Intern**
**International Centre for Theoretical Sciences (ICTS-TIFR), Bengaluru**
*Mentored by Prof. Parameswaran Ajith* May 2018 - July 2018
*Topic - Cosmological Large-scale Structure probes using gravitational-wave observations*

**Visiting Student (Masters Thesis)**
**Centre for High Energy Physics (CHEP), Indian Institute of Science (IISc), Bengaluru, India**
*Mentored by Prof. Chethan Krishnan* July 2017 - April 2018
*Topic - Complexity in context of Locality, Entanglement and Quantum Gravity*

**Summer Research Intern**
**The Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, India**
*Mentored by Prof. Raghunathan Srianand* May 2016 - July 2016
*Topic - Analysis of Quasar Absorption Lines from SDSS Photometric Data*

**Summer Research Intern**
**The National Centre for Radio Astrophysics (NCRA-TIFR), Pune, India**
*Mentored by Prof. Yashwant Gupta* May 2015 - July 2015
*Topic - Testing the fast transient detection pipeline of the GMRT*

## Publications

3. **Aditya Vijaykumar**, M. V. S. Saketh, Sumit Kumar, Parameswaran Ajith, Tirthankar Roy Choudhury
*Probing the large scale structure using gravitational wave observations of binary black holes*,
Submitted to *Physical Review Letters*, arXiv:2005.01111.

2. **Aditya Vijaykumar**, Shasvath J. Kapadia, Parameswaran Ajith
*Constraints on the time variation of the gravitational constant using gravitational wave observations of binary neutron stars*,
Submitted to *Physical Review Letters*, arXiv:2003.12832.

1. P. Virtanen *et al.* (incl. **Aditya Vijaykumar** as *SciPy 1.0 Contributor*)
*SciPy 1.0–Fundamental Algorithms for Scientific Computing in Python*,
*Nat Methods* 17, 261–272 (2020), arXiv:1907.10121.

## Seminars and Invited Talks

- *Probing Large Scale Structure using Binary Black Hole Observations* at ***Instituut-Lorentz* for Theoretical Physics, Leiden University**, Leiden, Netherlands, June 2020 (Online)
- *Probing Large Scale Structure using Binary Black Hole Observations* at **The Inter-University Centre for Astronomy and Astrophysics (IUCAA)**, Pune, India, September 2019

- *Probing Large Scale Structure using Binary Black Hole Observations* at **Max Planck Institute for Gravitational Physics**, Hannover, Germany, June 2019

## Conferences, and other Meetings

- Semester Participant, **Advances in Computational Relativity**, ICERM, Brown University, USA. September 2020 - December 2020 (Online)
- Poster titled *Constraints on Black Hole Mimickers using GWTC-1* at **ICTS In-house Symposium**, ICTS, Bengaluru, India, February 2020
- Talk titled *Probing Large Scale Structure using Binary Black Hole Observations* at **ICTS In-house Symposium**, ICTS, Bengaluru, India, February 2020
- Participant, **Discussion Meeting - Astrophysics of Supermassive Black Holes**, ICTS, Bengaluru, India, December 2019
- Talk titled *Probing Large Scale Structure using Binary Black Hole Observations* at **International Conference on Gravitation & Cosmology**, IISER, Mohali, India, December, 2019
- Participant, **Discussion Meeting - Future of Gravitational Wave Astronomy**, ICTS, Bengaluru, India, August 2019
- Talk titled *Probing Large Scale Structure using Binary Black Hole Observations* at **GR22 and Amaldi13**, Valencia, Spain, July 2019
- Talk titled *Gravitational Lensing from Orbiting Binary* at the **Paper Presentation competition of APOGEE 2017**, BITS Pilani, India (*First runner-up*)

## Schools and Tutoring

- Co-organizer and tutor, **ICTS Workshop on Parameter Estimation with bilby**, ICTS, Bengaluru, India, August 2020 (Online)
- Tutor, **LIGO-Virgo Collaboration Gravitational-Wave Open Data Workshop #3**, May 2020 (Online)
- Participant and Tutor for the *Numerical Hydrodynamics* mini-course, **ICTS Summer School on Gravitational Wave Astronomy**, ICTS, Bengaluru, India, May-June 2020 (Online)
- Participant and Tutor for the *Advanced General Relativity* mini-course, **ICTS Summer School on Gravitational Wave Astronomy**, ICTS, Bengaluru, India, July 2019
- Participant, **ICTS Summer School on Gravitational Wave Astronomy**, ICTS, Bengaluru, India, July 2018
- Participant, **ICTS Summer School on Gravitational Wave Astronomy**, ICTS, Bengaluru, India, July 2017

## Outreach Talks

- *The Whats, Whys and Hows of Gravitational-wave Astronomy*, **BMS College of Engineering, Bengaluru**, November 2019
- *Gravitational Waves - A New Tool for Cosmology!* at **Vigyan Samagam**, Visvesvaraya Industrial and Technological Museum, Bengaluru, India, August 2019

## Technical Skills

**Programming Languages** - Python, C, C++, Shell Script
**Softwares** - MATLAB, Mathematica
**Tools/Frameworks** - LaTeX, Git

## Scores and Awards

- Scored 960/990 on the Subject GRE in Physics, October 2017
- Secured all-India rank 21 in the Joint Entrance Screening Test (JEST), 2018 for admission into Physics PhD programmes in India
- Awarded the ICTS S.N. Bhatt Memorial Excellence Fellowship, 2018
- Selected for the Summer Research Fellowship of the Indian Academy of Sciences in 2016
- Recepient of the INSPIRE-DST Scholarship for Higher Education for the period 2013 to 2018

## References


- Prof. Parameswaran Ajith, ICTS – ajith@icts.res.in
- Dr. Shasvath Kapadia, ICTS – shasvath.kapadia@icts.res.in
- Dr. Sumit Kumar, AEI Hannover – sumit.kumar@aei.mpg.de
- Prof. Bala Iyer, ICTS – bala.iyer@icts.res.in