

# Aditya Vijaykumar

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RESERACH INTERESTS      Gravitational Wave Astronomy and Astrophysics, Tests of General Relativity and Cosmology

EDUCATION      **International Centre for Theoretical Sciences (ICTS-TIFR), Bengaluru**  
Research Scholar and Graduate Student in Physics      2018 - *Present*

**Birla Institute of Technology and Science (BITS), Pilani**  
M.Sc. (Hons.) Physics and B.E. (Hons.) Mechanical Engineering      2013 - 2018

High School - **St. Vincent's High School, Pune** (Maharashtra HSC)      2011 - 2013  
Secondary School - **Rosary High School, Pune** (Maharashtra SSC)      1999 - 2011

EMPLOYMENT      **Graduate Student**  
**International Centre for Theoretical Sciences (ICTS-TIFR), Bengaluru**  
*Mentored by Prof. Parameswaran Ajith*      Aug 2018 - *Present*

**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 and Debugging the Transient Detection Pipeline of GMRT*

PROJECTS      

- **Aditya Vijaykumar**, MV Saketh, Sumit Kumar, Parameswaran Ajith, Tirthankar Roy Chowdhury.  
*Probing the cosmological large-scale structure using gravitational-wave observations*  
(manuscript in preparation)
- **Aditya Vijaykumar**, Shasvath Kapadia, Parameswaran Ajith.  
*Constraining the time-variation of the Gravitational constant using gravitational-wave observations of biinary neutron stars*  
(manuscript in preparation)
- **Aditya Vijaykumar**, Nathan Johnson-McDaniel, Rahul Kashyap, Arunava Mukherjee, Parameswaran Ajith.  
*Constraints on Black Hole Mimickers from the Gravitational-wave Transient Catalog (GWTC) -1*

CONFERENCES, SCHOOLS AND TALKS      

- Participant, **Discussion Meeting - Astrophysics of Supermassive Black Holes**, ICTS, Bengaluru, India, December 2019
- Invited outreach talk titled *The Whats, Whys and Hows of Gravitational-wave Astronomy*, BMS College of Engineering, Bengaluru, November 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 **The Inter-University Centre for Astronomy and Astrophysics (IUCAA)**, Pune, Germany, September 2019
- Outreach talk titled *Gravitational Waves - A New Tool for Cosmology!* at **Vigyan Samagam**, Visvesvaraya Industrial and Technological Museum, Bengaluru, India, August 2019
- Participant and Tutor for the *Advanced General Relativity* mini-course, **ICTS Summer School on Gravitational Wave Astronomy**, ICTS, Bengaluru, India, July 2019
- Talk titled *Probing Large Scale Structure using Binary Black Hole Observations* at **GR22 and Amaldi13**, Valencia, Spain, July 2019
- Talk titled *Probing Large Scale Structure using Binary Black Hole Observations* at **Max Planck Institute for Gravitational Physics**, Hannover, Germany, June 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
- Talk titled *Gravitational Lensing from Orbiting Binary* at the **Paper Presentation competition of APOGEE 2017**, BITS Pilani, India (*First runner-up*)

#### TECHNICAL SKILLS

**Programming Languages** - Python, C, C++, Shell Script  
**Softwares** - MATLAB, Maple  
**Tools/Frameworks** - L<sup>A</sup>T<sub>E</sub>X, 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
- Receptient of the [INSPIRE-DST Scholarship for Higher Education](#) for the period 2013 to 2018