

## SHARAN BANAGIRI

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<b>CITIZENSHIP</b>	India
<b>EDUCATION</b>	<i>Ph.D</i> , Physics <span style="float: right;"><i>2014 - Present</i></span> University of Minnesota  <i>B.Tech</i> , Mechanical Engineering <span style="float: right;"><i>2009 - 2013</i></span> Indian Institute of Technology, Hyderabad
<b>RESEARCH INTEREST</b>	Astrophysics and cosmology with gravitational waves. Application of Bayesian and statistical methods to astrophysical data.
<b>RESEARCH EXPERIENCE</b>	<ul style="list-style-type: none"><li>• Unmodeled searches for long duration gravitational-wave transients.</li><li>• Methods for detection and parameter estimation of binary neutron star post-merger remnants.</li><li>• Methods to use gravitational-wave events as probes of large scale structure and anisotropies of matter distribution in the Universe.</li><li>• Development of Bayesian methods to detect anisotropies in the millihertz stochastic gravitational-wave backgrounds with LISA</li></ul>
<b>PROFESSIONAL EXPERIENCE</b>	<i>Graduate Researcher, 2016 through Present</i> <i>Advisor:</i> Prof. Vuk Mandic, PhD, Professor of Physics; University of Minnesota
<b>TECHNICAL SKILLS</b>	Python, MATLAB, Mathematica, Bash, C/C++, HTCondor, L <sup>A</sup> T <sub>E</sub> X, Git, Linux, vim, emacs
<b>SERVICE</b>	<ul style="list-style-type: none"><li>• ApJ referee</li><li>• LVC internal Burst and CW group reviewer.</li><li>• School of physics and astronomy colloquium committee member, <i>2016-2017</i></li></ul>
<b>AWARDS</b>	<ul style="list-style-type: none"><li>• Hoff Lu Fellowship, University of Minnesota, <i>2018</i></li><li>• Doctoral Dissertation Fellowship, University of Minnesota, <i>2019 - 2020</i></li><li>• Aneesur Rahman Award, University of Minnesota, <i>2020</i></li></ul>
<b>TEACHING</b>	<i>Physics Teaching Assistant</i> : Teaching assistant for introductory and lower level undergraduate physics course (2014 - 2018)
<b>PROFESSIONAL MEMBERSHIP</b>	LIGO Scientific Collaboration, American Physical Society, LISA Consortium

## TALKS

(selected)

- *September 2020: LISA Symposium*, A Bayesian analysis for the anisotropies in the stochastic gravitational wave background with LISA
- *December 2019: Texas Symposium on Relativistic Astrophysics, Portsmouth UK*  
Measuring angular correlations in the ensemble of binary black-hole mergers
- *October 2019: Cosmology Seminar, University of Minnesota*  
Measuring anisotropies of sub-threshold binary black-hole mergers
- *June 2019: IGC@25: Multi-messenger Universe, Penn State*  
Gravitational-wave searches for post-merger remnants following GW170817
- *2018: Cosmology Seminar, University of Minnesota*  
Gravitational-wave searches for post-merger remnants of GW170817
- *October 2018: Midwest Relativity Conference, WI*  
LVC searches for long-lived post-merger remnant of GW1708017
- *September 2018: LVC Meeting*  
Bayesian parameter estimation of binary neutron star post-merger signals
- *September 2018: LVC Meeting*  
Gravitational-wave searches for long-lived post-merger remnants from GW1708017
- *March 2018: LVC Meeting*  
STAMP search for long transient Post-Merger signals from GW170817

## PUBLICATIONS

I am an author or a coauthor on 78 papers in total. As a member of the LIGO scientific collaboration, I have been a coauthor on all LVC papers since 2017. Highlighted below are the papers which I made significant contributions to.

1. K. Z. Yang, V. Mandic, C. Scarlata and S. Banagiri, Searching for Cross-Correlation Between Stochastic Gravitational Wave Background and Galaxy Number Counts, arXiv:2007.10456.
2. E. Payne, S. Banagiri, P. Lasky and E. Thrane, Searching for anisotropy in the distribution of binary black hole mergers, arXiv:2006.11957.
3. S. Banagiri, V. Mandic, C. Scarlata and K. Z. Yang, Measuring angular N-point correlations of binary black-hole merger gravitational-wave events with hierarchical Bayesian inference, Phys. Rev. D **102**, no.6, 063007 (2020)
4. S. Banagiri, M. W. Coughlin, J. Clark, P. D. Lasky, M. A. Bizouard, C. Talbot, E. Thrane and V. Mandic, Constraining the Gravitational-Wave Afterglow From a Binary Neutron Star Coalescence, Mon. Not. Roy. Astron. Soc. **492**, no.4, 4945-4951 (2020)
5. S. Banagiri, L. Sun, M. W. Coughlin and A. Melatos, Search strategies for long gravitational-wave transients: hidden Markov model tracking and seedless clustering, Phys. Rev. D **100**, no.2, 024034 (2019)
6. B. P. Abbott *et al.*, Search for gravitational waves from a long-lived remnant of the binary neutron star merger GW170817, Astrophys. J. **875**, no.2, 160 (2019)
7. M. Fitz Axen, S. Banagiri, A. Matas, C. Caprini and V. Mandic, Multiwavelength observations of cosmological phase transitions using LISA and Cosmic Explorer, Phys. Rev. D **98**, no.10, 103508 (2018)