SHASHANK ASWATHANARAYANA

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My interdisciplinary research spans spatial/3D audio, psychoacoustics, music, and religious studies. My present research explores the acoustics of South Indian temples and the characteristics of sounds used in Hindu religious worship as they relate to the psychoacoustic effects on human hearing. Through it I intend to uncover the influence of religious sound on the interior architectural design of Hindu temples and create virtual environments that replicate these spaces making their unique features more widely accessible.

EDUCATION

PhD Media Arts and Technology — Dec 2022
University of California, Santa Barbara (UCSB)

MM Music Technology — May 2014
New York University

BE Electronics and Communication Engineering — June 2012
Visvesvaraya Technological University

ACADEMIC HONORS AND ACHIEVEMENTS

Ramanujan Fellowship - Offered (Relinquished)
Anusandhan National Research Foundation (ANRF) August 2025
Awarded this prestigious fellowship to be a research scholar at IIT Madras. Relinquished after accepting a permanent faculty position in India, which made me ineligible.

Podcast Guest – Across Acoustics Podcast June 2025
Invited to discuss my research, The Acoustics of Hindu Temples, on the Across Acoustics podcast, the official podcast of the Acoustical Society of America.

Cover Feature – JASA Express Letters March 2025
Acoustic analysis of two Hindu temples in Southern India was selected for the cover of march issue of the JASA Express Letters.

Emergent Ventures India grant - $21000 Sept 2023
A research grant to support the fieldwork of the Acoustics of Hindu Temples project.

Panelist, "Reorientation" event Nov 2022
This event was a chance for students who had recently achieved the ABD milestone to connect and engage senior ABD students who were part of the panel.

Block Grant Fellowship (MAT department, UCSB) - $4000 Sept 2022

Commencement Student Speaker June 2022
Selected to deliver the student address among 435 graduates for the UCSB Graduate Division commencement ceremony.

Academic Senate Doctoral Student Travel Grant - $400 Apr 2021

Corwin Award for Solo Percussion (3rd Prize) – 2 times May 2019 & 2017

Baden Württemberg Stipendium - €4500 June 2017
Research fellowship to conduct PhD research at Hochschule für Gestaltung, Germany

Block Grant Fellowship (MAT department, UCSB) - $15000 Sept 2016

Achiever Award (Outstanding student of the year) June 2010

PUBLICATIONS

Aswathanarayana, S., & Boren, B. (2025). Acoustic analysis of two Hindu temples in Southern India. *JASA Express Letters, 5*(3), 031601. https://doi.org/10.1121/10.0036033.

Aswathanarayana, S. (2021, May). Comparison of Spatialization Techniques with Different Music Genres II. In *Audio Engineering Society Convention 150*. Audio Engineering Society.

Aswathanarayana, S. (2020, Oct). Comparison of Spatialization Techniques with Different Music Genres. In *Audio Engineering Society Convention 149*. Audio Engineering Society.

Aswathanarayana, S. (2017, May). Effect of a Known Environment on the Estimation of Sound Source Distance. In *Audio Engineering Society Convention 142*. Audio Engineering Society.

Aswathanarayana, S., & Roginska, A. (2014). I Hear Bangalore3D: Capture and Reproduction of urban sounds of Bangalore using an Ambisonic Microphone. Proceedings of the International Conference on Auditory Display (ICAD), New York, June, 2014.

(*Forthcoming*):

Aswathanarayana, S.; Boren, B. Resonating Rocks: The Acoustics of Four Hindu Cave Temples in Southern India. *Heritage* 2025 (under review).

Boren, B.; **Aswathanarayana, S.** Early Protestant Church Acoustics:
Huldrych Zwingli and the Zurich Grossmünster. *Acoustics* 2025 (under review).

Aswathanarayana, S. Towards (Re)-Sounding Purandara in the Vittala Temple. *Asian Sound Cultures 2: Archives, Sources Methodologies, Terminologies.* 2025 (under review).

TEACHING EXPERIENCE

American University Spring 2024, 2025
Instructor, Audio Technology

- Designed and taught the course, Advanced Studies in Audio Technology: 3D Audio.
- This course was co-listed for upper division undergraduate students and graduate students.

University of California, Santa Barbara Jan 2023 to July 2023
Academic Coordinator, Physics

- Directly manage teams of 3-4 graduate students per course, 2-3 courses per quarter, ensuring deadlines are met and high-quality education products are delivered to thousands of students.
- Coordinate TAs, faculty and staff as part of the Instructional Lab Group that runs the full breadth of courses at UCSB Physics.

University of California, Santa Barbara Jan 2017 to Sept 2022
Teaching Assistant, Physics

- Taught the PHYS6L series, a 3-part introductory undergraduate lab for non-physics majors averaging 120 students per quarter, covering the following topics: Kinetics and kinematics, waves, electricity, magnetism, optics, and nuclear physics
- Taught for 11 quarters and 3 summers totaling to 1460 students over the period.
- Lead TA for the series starting Fall 2019. As lead TA, I was responsible for conducting TA meetings and coordinating with the instructor for proctoring exams.
- Helped design course material when classes moved to virtual instruction in April 2020.

University of California, Santa Barbara Sept 2018 – Dec 2018
Teaching Assistant, Media Arts and Technology

- Designed and held weekly section classes that complemented the lectures in the Introduction to Music Technology course.
- The section classes gave a practical outlook to the topics covered in lecture and gave the students an opportunity to get hands-on experience with some of the software tools used in the field of Music Technology.
- Graded weekly quizzes.

INVITED TALKS

South Asian Religions and Cultures Research Focus Group, UCSB

- Sonic Spatiality in Sacred Spaces: An Analysis of Resonance in South Indian Temples May 2025

25th International Congress on Acoustics

- Resonating Rocks: The acoustics of Hindu cave temples — May 2025
  Aswathanarayana, S., & Boren, B. (2025). Resonating rocks: The acoustics of Hindu cave temples. The Journal of the Acoustical Society of America, 157(4_Supplement), A298-A298.

Symposium at Yale University - Echoes Through Time: Perspectives on Sacred Space Acoustics

- Resonating Rocks: The acoustics of Hindu cave temples — March 2025

Asian Sound Cultures Conference

- (Re)Sounding Purandara in the Vittala Temple — Fall 2024

186th Acoustical Society of America Conference

- Acoustics of two Hindu temples in southern India — Spring 2024
  Aswathanarayana, S., & Boren, B. (2024). Acoustics of two Hindu temples in southern India. The Journal of the Acoustical Society of America, 155(3_Supplement), A129-A129. https://doi.org/10.1121/10.0027050.

GUEST LECTURES

American University

- Rhythmic structures in Middle East music — Spring 2024

California Polytechnic State University

- How theatre and music are intertwined in India — Fall 2021
- The compositional process for background music in a play — Fall 2021

University of California, Santa Barbara

- Introduction to North Indian Classical Music (10 quarters)
  Gave this lecture-demonstration in the World music class — Fall 2021 – Spring 2025
- Worship Space Acoustics:
  Exploring its application in Hindu temples — Spring 2023
- Rhythms in Indian and Middle Eastern Music — Fall 2021
- Rhythms in Indian and Middle Eastern Music — Spring 2019
- How do we Listen? A look into the world of 3D Audio — Winter 2019
- Virtual Surround Sound — Fall 2018

Hochschule für Gestaltung, Karlsruhe, Germany

- Spatialization and Music Genres — Summer 2017

RESEARCH AND INDUSTRY EXPERIENCE

Assistant Professor, Ahmedabad University Nov 2025 - Present

Faculty Fellow in Audio Technology, American University Aug 2025 – Oct 2025

Postdoctoral Fellow in Audio Technology, American University Aug 2023 – July 2025
- Researcher in the Audio Technology program working on a project, "Acoustics of Hindu Temples."

Music Composer, California Polytechnic State University, USA Sept 2021 – Nov 2021
- Composed, recorded, mixed, and mastered all the tracks for the play, "Writer's Block" (an original ensemble script)

Humtap Inc., San Francisco, USA July 2014 to May 2016
Research Engineer
- Research and Development in music information retrieval, specifically focusing on music content analysis by extraction and interpretation of musical features such as rhythmic structure, pitch detection, segmentation.
- Developed automated analysis of large databases of musical material matching human perception and media exports to third party REST APIs.
- Evaluated various music content analysis algorithms and implemented prototypes.

New York University, New York, USA Feb 2013 to May 2014
Research Assistant
- Cross-Cultural perception of Indian Classical Music. Analyzing the emotional responses of Western listeners to Indian Classical Music.

PROFESSIONAL TRAINING

Applications in Communication Acoustics
RWTH Aachen University and TU Dresden, Online, March 23, 2020

PROFESSIONAL SERVICE

Peer-Reviewer Audio Engineering Society 152nd - 159th Conventions, Mar 2022 - Present

Member, Member Engagement Committee, Acoustical Society of America, June 2025 - Present

COMMUNITY SERVICE

Spandana NGO Trust
Trustee, Bengaluru, India, 2016-Present

Sri Vivekananda Sevashrama
Volunteer, Bengaluru, India, 2003-2012

PROFESSIONAL AFFILIATIONS

Audio Engineering Society

Acoustical Society of America