

Chirag Gokani

<https://chiragokani.github.io/>

chiragokani@gmail.com

(214) 901-1208

EDUCATION

- **University of Texas at Austin** 2021 - present
Ph.D. (expected 2026) Mechanical Engineering (Acoustics Research Area) GPA: 4.0
- **University of Texas at Dallas** Class of 2021
B.S. Physics, Minor in Music, Collegium V Honors, Magna Cum Laude GPA: 3.897

PUBLICATIONS

- C. A. Gokani, M. R. Haberman, M. F. Hamilton, “Analytical solutions for acoustic vortex beam radiation from planar and spherically focused circular pistons,” *JASA Express Lett.* **4**, 124001, (2024).
- C. A. Gokani, M. R. Haberman, M. F. Hamilton, “Paraxial and ray approximations of acoustic vortex beams,” *J. Acoust. Soc. Am.* **155**, 2707-2723, (2024).

PROCEEDINGS

- C. A. Gokani, T. S. Jerome, M. R. Haberman, M. F. Hamilton, “Born approximation of acoustic radiation force used for acoustofluidic separation,” *Proc. Mtgs. Acoust.* **48**, 045002 (2022).

TALKS

- C. A. Gokani, M. R. Haberman, M. F. Hamilton, “Paraxial and ray approximations of acoustic vortex beams,” Center for Nonlinear Dynamics, Department of Physics, UT Austin, September 25th, 2024.
- C. A. Gokani, M. R. Haberman, M. F. Hamilton, “Effects of increasing orbital number on the field transformation in focused vortex beams,” *J. Acoust. Soc. Am.* **155**, A346 (2024).
- C. A. Gokani, J. M. Cormack, M. F. Hamilton, “Growth rates of harmonics in nonlinear vortex beams,” *J. Acoust. Soc. Am.* **154**, A328 (2023).
- C. A. Gokani, S. P. Wallen, M. R. Haberman, “Reciprocity, passivity, and causality in fully coupled acousto-electrodynamic media,” *J. Acoust. Soc. Am.* **154**, A118 (2023).
- C. A. Gokani, S. P. Wallen, M. F. Hamilton, M. R. Haberman, “Source-driven homogenization theory for electro-momentum coupled scatterers,” *J. Acoust. Soc. Am.* **153**, A120 (2023).
- S. P. Wallen, B. M. Goldsberry, C. A. Gokani, M. R. Haberman, “Computational analysis of sub-wavelength scatterers exhibiting electro-momentum coupling,” *J. Acoust. Soc. Am.* **153**, A120 (2023).
- C. A. Gokani, Y. Meng, M. R. Haberman, M. F. Hamilton, “Analytical solution for a focused vortex beam radiated by a Gaussian source,” *J. Acoust. Soc. Am.* **152**, A56 (2022).
- C. A. Gokani, M. R. Haberman, M. F. Hamilton, “Physical acoustics homework problems written by students: undisciplined, irreverent, and original,” *J. Acoust. Soc. Am.* **152**, A168 (2022).
- C. A. Gokani, T. S. Jerome, M. R. Haberman, M. F. Hamilton, “Born approximation of acoustic radiation force used for acoustofluidic separation,” *J. Acoust. Soc. Am.* **151**, A90 (2022). (Also presented at the 22nd International Symposium on Nonlinear Acoustics, Oxford, UK)

EXPERIENCE

- **Graduate Program in Acoustics at UT Austin and the Applied Research Laboratories** 2021 - present
Graduate Research Assistant
 - Studying elastodynamic and electrodynamic bianisotropy with Prof. Michael Haberman
 - Studying vortex beams and acoustic radiation force with Prof. Mark Hamilton
 - Austin Student Chapter of the ASA, chair, 2024-2025 academic year
 - Texas Acoustics Seminar Administrator, fall 2022
- **Acoustical Society of America (ASA)** 2023 - 2025
Biomedical Acoustics Technical Committee (BATC) student council representative
 - Promote the interests of students in the ASA and organize student-related activities within the Society
 - Serve as a conduit for information for students within BATC
 - Attend Technical Committee meetings to report on student activities

• Department of Physics at UT Dallas

Teaching Assistant for Electromagnetism and Waves lab

Spring 2020

• Advanced Research in Thermo Fluid Systems (ARTS) Lab, UT Dallas

Undergraduate Research Assistant

Summer 2019

- Assisted with data collection for Prof. Diana Alatalo's doctoral project on milk rheology

• UTD Cosmology, Relativity and Astrophysics Group

Undergraduate Research Assistant

2017-2018

- Under the supervision of Prof. Michael Kesden, studied the perturbative effects of tertiary black holes on the gravitational waves radiated by inspiraling binary black holes
- Under the supervision of Prof. Kaloyan Penev, catalogued data from the Gaia space observatory

HONORS & AWARDS

- **Walker Department of Mechanical Engineering 2024 Poster Competition:** third place for “Paraxial and ray approximations of acoustic vortex beams”
- **Structural Acoustics and Vibrations Student Competition:** tied for first place for “Source-driven homogenization theory for electro-momentum coupled scatterers” at 183rd ASA in Chicago, *Spring 2023*
- **Chester M. McKinney Graduate Fellowship in Acoustics:** awarded by the Applied Research Laboratories (ARL:UT) for support in acoustics research, 2022-2025
- **T. W. Whaley, Jr. Friends of Alec Endowed Scholarship:** awarded by the Cockrell School of Engineering at UT Austin, 2021-2022
- **Eugene McDermott Scholar:** One of twenty-three undergraduates selected for flagship scholarship at the University of Texas at Dallas, 2017-2021

TECHNICAL SKILLS

- **Theory:** acoustics, electrodynamics, continuum and classical mechanics
- **Computation:** MATLAB, Mathematica
- **Writing:** L^AT_EX, HTML/CSS, Markdown, MS Office
- **Experiment:** rheometry, astronomy, spectroscopy

EDUCATIONAL RESOURCES

- **Wave Phenomena,** web-based class notes from ME 384N, taught by Professor Mark F. Hamilton, *spring 2024*
- **Review for the acoustics qualifying exam,** review of physical acoustics, ultrasonics, nonlinear acoustics, and math for the PhD qualifying exam in acoustics at UT Austin, *summer 2023*
- **IntelliChoice SAT Math Course,** free math course for high school students studying for the SAT, *summer 2020*

AFFILIATIONS

- **Acoustical Society of America, Student Member,** 2021-present
- **Texas Astronomical Society, Student Member,** 2018-2021

VOLUNTEERING

- **Women in STEM,** volunteer, 2022 - present
- **IntelliChoice,** math tutor and branch manager, 2018 - 2022
- **Society of Physics Students at UTD,** star party coordinator, 2017 - 2021
- **Helbing Jazz Initiative,** jam session coordinator, 2019-2020
- **Richardson Public Library,** volunteer, 2017 - 2020

EXTRACURRICULAR ACTIVITIES

- **Wind chimes:** I have been handcrafting wind chimes since my sophomore year at UTD.
- **Music:** I have had a lifelong love for music.