

NIKHIL GERARD JRK

rjoseph3@ncsu.edu | +1 919-592-8618

Raleigh, NC 27606 | <https://www.linkedin.com/in/nikhilgerard/>

PROFESSIONAL EXPERIENCE

- Graduate Research Assistant, North Carolina State University** **Aug. 2017 – Present**
Dr. Yun Jing's Research Group, Acoustics and Ultrasonics Laboratory,
- Graduate Teaching Assistant, North Carolina State University** **Jan. 2017 – May 2017**
MAE 214 Solid Mechanics,
Department of Mechanical and Aerospace Engineering
- Research Intern, Indian Institute of Technology – Madras (IIT-M)** **May 2015 – July 2015**
Dr. Shaikh Faruque Ali, Vibration Controls and Energy Harvesting Laboratory,
Department of Applied Mechanics

EDUCATION

- Ph.D., Mechanical Engineering, North Carolina State University, USA **Jan 2018 – Present**
M.S., Mechanical Engineering, North Carolina State University, USA **Aug 2016 – Dec 2017**
B.E., Mechanical Engineering, Anna University, India **July 2012 – May 2016**

RESEARCH EXPERIENCE

- Research Assistant, Acoustics and Ultrasonics Laboratory, North Carolina State University**
- **Probing the acoustical properties of nonwovens: a microscopic approach** **Aug 2017 – Present**
Studying the influence of nonwoven microstructure on macroscopic acoustic behavior, by means of established microscopic numerical models. This will enable the design of optimal acoustic nonwovens without resorting to entirely experimental approaches.
 - **Role of loss in acoustic gradient index metasurfaces** **Aug 2016 – Aug 2017**
Examined the influence of thermoviscous dissipation and constituent material properties on the performance of space-coiling and hybrid resonant micro-structures that are employed in passive wavefront steering metasurfaces for airborne sound.
- NASA's Langley Research Center**
- **RASC-AL Special Edition** **Aug 2016 – June 2017**
Was a part of the team that qualified to the final stage of the "Mars Ice Challenge". Programmed the actuation and controls for the system which was designed to extract and process ice from the simulated Martian subsurface
- Indian Institute of Technology – Madras (IIT-M)**
- **Summer Fellowship Programme** **Aug 2016 – June 2017**
Mathematical modeling and finite element analysis of a bimorph cantilever for vibrational energy harvesting

SKILLS

Computational/Software: COMSOL Multiphysics, ANSYS, ABAQUS, MATLAB, C, C++, FORTRAN, SolidWorks, ProEngineering, Blender, Origin, Inkscape, Advanced Microsoft Office, Steinberg Cubase, Ableton Live and Logic Pro X

Experimental: Arduino microcontrollers, two and four microphone impedance tube set ups for sound absorption and transmission loss, anechoic chamber measurement environment, audio and airborne ultrasonic data acquisition – NI SignalExpress/MATLAB DAQ/Picoscope/G.R.A.S and B&K Microphones

Language: English, Tamil, Hindi, French and German (in the order of fluency)

Inter-personal skills: Academic and business writing, teaching and oratory

OTHER ACTIVITIES:

- Publication:** "Investigation of acoustic metasurfaces with constituent material properties considered", *Journal of Applied Physics, Volume 123, Issue 12, March 2018*
- Professional society membership:** Acoustical Society of America(ASA), American Physical Society (APS)
- Awards:** ASA's Larry Royster Scholarship, Second place for poster presentation at the 'MAE Research Symposium'
- Graduate student mentor** – Acoustics and Ultrasonics Laboratory, NC State University