Kevin Jose

CONTACT INFORMATION

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RESEARCH INTERESTS

Mechanical Vibrations, Musical Acoustics, Solid Mechanics

WORK EXPERIENCE

University of Southampton, Southampton SO16 7QF, UK
PhD student & Marie Sklodowska-Curie Fellow — May 2019 - Present

- Researching effect of structural periodicity in mechanical wave propagation characteristics
- Industrial applications of the aforementioned will be explored at Vestas-Aircoil, Denmark

Boston Consultancy Group, Gurgaon HR 122002, India
Specialist Consultant — Nov 2018 - May 2019

- Worked on a profit turnaround program for one of India's largest steel manufacturers
- Focused on de-bottlenecking of finishing operations at the world's largest rail mill
- Wrote a Python based code to collect and summarize defect occurrence in the final product. This was later deployed at the plant for use in maintenance planning and execution.

New York University Tandon School of Engineering, Brooklyn NY 11201, USA
Ph.D. Candidate, Mechanical Engineering — Aug 2017 - Oct 2018

- Conducted research in the areas of electro-active materials (results published in Appl. Phys. Lett.) and wearable assistive technology
- Took four graduate courses (GPA: 3.7/4.0)
- Served as teaching assistant for two semesters for an undergraduate course
- Received Best PhD Qualifying Exam Performance Award from the dept.

EDUCATION

Indian Institute of Technology Kanpur, Kanpur UP 208016, India
B.Tech.-M.Tech. Dual Degree, Mechanical Engineering — Jul 2012 - Aug 2017
with a minor in control systems engineering

- Masters Thesis: Vibration of circular membranes backed by taut strings. (Results published in J. Acoust. Soc. Am.)
- Advisors: Prof. Anurag Gupta, Prof. Saikat Ghosh
- M.Tech. CPI: 8.7/10
- B.Tech. CPI: 7.6/10

SUMMER INTERNSHIPS

Sigapore University of Technology and Design, Upper Changi 487372, Singapore
Visiting Student — May 2016 - July 2016

- Received training in soft material robotics design and fabrication

Whirlpool Global Technology & Engineering Center, Pune MH 411014, India
Summer Intern — May 2015 - July 2015

- Proposed a mathematical model of a dishwasher
- Received Best Intern Award

Refereed Journal Publications

1. Boldini A.*, **Jose K.***, Cha Y., and Porfiri M. "Enhancing the deformation range of ionic polymer metal composites through electrostatic actuation." *Applied Physics Letters* 112.26 (2018): 261903 (*Co-first authors)

2. **Jose, K.**, Chatterjee, A., and Gupta, A. "Acoustics of Idakkā: An Indian Snare Drum with Definite Pitch." *The Journal of the Acoustical Society of America* 143.5 (2018): 3184-3194

Conference Proceedings

1. Boldini, A., **Jose K.**, Cha Y., and Porfiri M. "Electrostatic actuation in ionic polymer-metal composites." In *Nano-, Bio-, Info-Tech Sensors and 3D Systems III*, vol. 10969, p. 1096910. International Society for Optics and Photonics, 2019.

Awards, Fellowships & Scholastic Achievements

Marie Sklodowska-Curie Fellow ITN
Awarded by University of Southampton. 2019

Best Mechanical Engineering PhD Qualifying Exam Performance
Awarded by NYU Tandon School of Engineering. 2018

School of Engineering Fellowship
Awarded by NYU Tandon School of Engineering. 2017

Best Intern Award
Awarded by Whirlpool Global Technology & Engineering Center, Pune. 2015

Merit-cum-Means Scholarship
Awarded by IIT Kanpur. 2014

IIT-Joint Entrance Exam All India Rank 792
amongst ∼0.47 million candidates (99.8%ile). 2012

KVPY Fellowship Award (Declined)
National fellowship for students interested in research careers. 2012
Awarded by the Government of India & Indian Institute of Science, Bangalore.

Research Experience

NYU Tandon School of Engineering

- Conceptualized a wearable vibro-tactile haptic feedback belt for assisting visually impaired individuals in navigation. Macro-fiber composite actuators are used to provide a haptic map of the visual space through vibration of varying intensities and frequencies. Designed and fabricated an op-amp based driving circuit (& PCB) capable of driving the actuators at the prescribed frequency. Designed and fabricated a low profile housing for the actuators for use in final product.
- Demonstrated a technique to improve actuation range of ionic polymer metal composites using electrostatic actuation. Designed and fabricated the experimental setup and associated electronic circuitry. Conducted the experiments and subsequent analysis.

IIT Kanpur

- Proposed a reduced order model of vibration of a circular membrane backed by two taut strings and it was shown to yield several harmonic overtones. Such a membrane is present at each end of the barrel of an *idakkā*, an Indian snare drum well known for its rich musicality. Recordings of this musical drum were analysed and it shown that the drum has a rich set of harmonic overtones as predicted by the aforementioned model. Also, proposed a computationally inexpensive model of the string-membrane interaction as part of the modelling effort.

Relevant Graduate Courses

Applied Numerical Methods, Optimization Methods in Engineering Design, Approximate Methods in Engineering Mathematics, Wave Propagation in Solids, Stochastic Calculus, Biostatistics

Teaching Experience

Teaching Assistant

NYU Tandon School of Engineering

- ME-UY 3211: Mechanics of Materials Laboratory — Spring 2018
- ME-UY 3211: Mechanics of Materials Laboratory — Fall 2017

IIT Kanpur

- ESO 202A/204: Mechanics of Solids — Spring 2017
- MSO 202A: Complex Analysis — Fall 2016

Technical Skills

Programming Languages: MATLAB, Python, ANSYS APDL, R
Softwares: Mathematica, AutoCAD, Autodesk Inventor, ANSYS Mechanical
Development Platforms: Arduino, Raspberry Pi
Electronics: AVR μCs, PCB design and fabrication
Rapid Prototyping: 3D printing, Laser Cutting
Soft Robotics Fabrication: Mold Design, Casting

Mentoring Experience

NYU Tandon School of Engineering, Brooklyn, NY, USA
Mentored 2 undergraduate student and 1 masters student in their summer projects

Electronics Club, IIT Kanpur, Kanpur, UP, India
Delivered lectures and workshops with more than 300 attendees/participants on hobbyist electronics. Mentored 8 undergraduate summer projects.

Last updated on June 20, 2019