

Ninad Vijay Puranik

+1 438 493 3706 | puranik.ninad@gmail.com | [linkedin.com/in/ninad-puranik](https://www.linkedin.com/in/ninad-puranik) | github.com/PNinad | [Google scholar](https://scholar.google.com/citations?user=9WpYUgEAAAAJ)

EXPERIENCE

PhD Student- Computational Acoustics Modeling Lab

Sep 2021 - ongoing

McGill University

Montreal, Canada

- Development of synthesis models and interfaces for a digital harmonium.
- Research on 'Assistive Technology for Trumpet Pedagogy' as part of CIRMMT Student Award project

Research Assistant- Music Performance Simulator

Mar 2022 - Nov 2022

McGill University

Montreal, Canada

- Software development for Performance Science research at the Music Performance and Body Lab

Research Intern (part-time) - HRTF and Room acoustics

Oct 2023 - Jan 2024

Outerecho Inc.

Montreal, Canada

- Implementing reflection and refraction filters for room acoustics simulation, exploring machine learning approaches for HRTF interpolations.

Co-Instructor - MUMT301 Music and the Internet

Fall 2022 & Fall 2023 terms

McGill University

Montreal, Canada

- Provide a friendly introduction to advanced concepts in programming to music performance students with little or no background in computer programming, through the development of simple web-applications related to music.

Lead Engineer - Machine Learning

April 2020 – Sep 2021

Airtel X Labs

Bangalore, India

- Worked on customer care automation for Airtel, developing speech recognition and text-to-speech in multiple low-resource Indian languages

Research and Development Engineer

Oct 2019 – Mar 2020

MusicMuni Labs (Riyaz App)

Bangalore, India

- Ported the SOTA algorithm developed in Python during my master thesis to an efficient C++ implementation capable of running on mobile devices to assess the singing exercises on the Riyaz Learn-to-sing Mobile App.

Research Assistant - MusicCritic project,

Oct 2018 – July 2019

Music Technology Group (MTG-UPF)

Barcelona, Spain

- Developed automatic assessment tool to grade pre-recorded singing performances of students based on the similarity with a reference performance by a teacher
- Investigated methods and features for audio to audio alignment of two versions of the same melodic phrase
- Devised new features based on pitch histogram to gauge pitch accuracy of singing

Founder-Director

Apr 2012 - Jun 2018

Verve Study Circle

Pune, India

- Founded and run the institute to train pre-university students for Mathematics, Physics Olympiads and science & engineering entrance examinations to give them strong mathematical foundations and scientific temperament for their university studies and beyond.

SCIENTIFIC ACHIEVEMENTS:

- Puranik, N.V. and Scavone, G.P., 2022, September. Physical modelling synthesis of a harmonium. In Proceedings of Meetings on Acoustics FVTMA (Vol. 49, No. 1, p. 035015). Acoustical Society of America. <https://asa.scitation.org/doi/abs/10.1121/2.0001679>
- Puranik, N., & Scavone, G. Physically Inspired Signal Model for Harmonium Sound Synthesis. Proc. of Proceedings of the 26th International Conference on Digital Audio Effects, 2023 (DAFx2023 Copenhagen).
- Puranik, N., & Scavone, G. Clamped bar model for free reeds. 10th Convention of the European Acoustics Association, Forum Acusticum, Torino, 2023

- Puranik, N., West, T., Wanderley, M. M., & Scavone, G. (2025, April). Thoughts on Mapping and Interface Design of a Keyboard to Perform Continuous Pitch Ornamentations in Hindustani Music. In 2025 IEEE International Conference on Acoustics, Speech, and Signal Processing Workshops (ICASSPW) (pp. 1-5). IEEE.
- West, T., Puranik, N., Scavone, G., & Wanderley, M. (2025). Towards the Continuous Harmonium: Replicating the Continuous Keyboard. In Proceedings of the International Conference on New Interfaces for Musical Expression (pp. 406-409).
- A.Acquilino, N.Puranik, I.Fujinaga, and G. Scavone, “A Dataset and Baseline for Automated Assessment of Timbre Quality in Trumpet Sound”, in Proc. of the 24th Int. Society for Music Information Retrieval Conf., Milan, Italy, 2023.
- A. Acquilino, N. Puranik, I. Fujinaga, G. Scavone, 2023. Detecting efficiency in trumpet sound production: proposed methodology and pedagogical implications. Proc. of the 5th Stockholm Music Acoustic Conference.
- ‘A discrete instrument in an indiscrete world: Developing a digital harmonium for Indian music’ presentation for Research Alive 2024-25 Student Award.
<https://youtu.be/l8ngmK1UjTA?si=cp3p0R-TlMjA3cIn>
- CIRMMT Student Award for project on ‘Assistive Technology for Trumpet Pedagogy’ in collaboration with Alberto Acquilino. <https://www.cirmmt.org/en/funding/past-student-award-recipients>
- CIRMMT Student Award for project on ‘Harmonium Continuum: a keyboard interface for melodic expressions in Hindustani music using traditional harmonium gestures’ in collaboration with Travis West. <https://www.cirmmt.org/en/funding/past-student-award-recipients>

EDUCATION

McGill University

Ph.D. Music Technology

Montreal, Canada

Sep 2021 – Dec 2025 (anticipated)

- **Lab:** Computational Acoustic Modelling Laboratory
Supervisor: Prof. Gary Scavone

Universitat Pompeu Fabra

M.S. in Sound and Music Computing, GPA : 8.83 / 10

Barcelona, Spain

Sep 2018 – Aug 2019

- **Thesis:** Automatic Assessment of Singing
Supervisor: Prof. Baris Bozkurt Co-supervisor: Prof. Xavier Serra

<https://zenodo.org/record/3932439>

Birla Institute of Technology & Science

B.E. (Hons.) Mechanical Engineering , GPA : 8.38 / 10

Pilani, India

Aug 2006 – May 2010

SKILLS

- **Skills :** Musical Acoustics, Audio signal processing, Music information retrieval, Machine learning, Teaching, Music Performance
- **Languages:** Python, Bash, C/C++, MATLAB, Pure Data, Max/MSP

OTHER ACHIEVEMENTS

- **Accomplished Harmonium player:** I regularly perform as a soloist and accompanist for Hindustani Music concerts. Links to some of my performances: <https://pninad.github.io/puranikninaad/music.html>
- Rated tournament Chess Player [FIDE international rating: current 2044, highest 2130]