Debasish Ray Mohapatra

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EDUCATION

University of British Columbia, Vancouver, Canada — Jan 2025 (Expected)
Ph.D., Electrical and Computer Engineering
- Advisor: Dr. Sidney Fels, P.Eng.

University of British Columbia, Vancouver, Canada — 2017 - 21
M.A.Sc., Electrical and Computer Engineering
- Thesis: Talking Tube - A novel approach for vocal tract acoustic modelling using the finite-difference time-domain (FDTD) method.
- Advisor: Dr. Sidney Fels, P.Eng.

Siksha 'O' Anusandhan University, Bhubaneswar, India — 2008 - 13
B.Tech., Electronics and Communication Engineering
- Project: Image segmentation based on mutual information
- Advisor: Sunita Samant, M.Tech.

PROFESSIONAL EXPERIENCE

Tata Consultancy Service (TCS) — 2014 - 17
Software Test Engineer
- Functional and regression testing of the front-end (Web app) and back-end (ETL system) applications.

RESEARCH EXPERIENCE

VocalTractLab, TU Dresden, Germany — 2022
Visiting Research Scholar (June-August)
Project: A comparative analysis of vocal tract centreline determination algorithms.
Advisor: Dr.-Ing. Peter Birkholz

Human Communication Technologies Lab, UBC, Canada — 2018 - Present
Graduate Research Assistant
Project: Vocal tract acoustic modelling.
Advisor: Dr. Sidney Fels, P.Eng.

TEACHING EXPERIENCE

University of British Columbia, Canada
Teaching Assistant
Human-Computer interfaces in engineering design, CPEN 441
Introduction to computation in engineering design, APSC 160
Introduction to microcomputers, CPEN 211

University of British Columbia, Canada
Peer Tutor, Center for Accessibility
Computational thinking, CPSC 100
Basic algorithms and data structures, CPSC 221

FELLOWSHIPS & GRANTS

- **Interspeech Student Travel Grant**, ISCA (600 EUR) — 2022
  Conference registration and travel grant to Incheon, South Korea
- **UBC Language Sciences Trainee Travel Fund**, UBC (3000 CAD) — 2022
  Travel fund for short-term visit to TU Dresden, Germany

AWARDS & HONORS

- **Graduate Student Travel Award**, UBC 2022
  (500 CAD)
- **Go Global Self-Directed Research Award**, UBC 2022
  (1500 CAD)
- **Graduate Covid Program Delay Tuition Award**, UBC 2021
  (1917 CAD)
- **President's Academic Excellence Initiative PhD Award**, UBC 2021-Present
  (1545 CAD/year)
- **International Tuition Award**, UBC 2018-Present
  (3200 CAD/year)
- **Certification of Appreciation for outstanding contribution**, TCS 2015

MISCELLANEOUS

Leadership & Volunteer

- **Human Communication Technologies Lab Ambassador**
  Role: Voluntarily worked as the lab representative for the HCT lab, UBC.

Students Mentored

- Anusika Nijher, University of British Columbia, 2021 - 22
  A machine learning-based approach for mapping the vocal tract like tube geometries and their acoustic formants.
- Rongshuai Wu, University of British Columbia, 2022
  GPU Parallelization of the 2D and 3D FDTD algorithms to speed-up the computational acoustic model simulation.

REFEREED CONFERENCE PROCEEDINGS

[6] **Mohapatra, D.**, Fleischer, M., Zappi, V., Birkholz, P., & Fels, S. (2022). *"Three-dimensional finite-difference time-domain acoustic analysis of simplified vocal tract shapes"*, Interspeech, pp. 764-768, Incheon, Korea.

[5] **Mohapatra, D.**, Saha, P., Liu, Y., Gick, B., & Fels, S. (2021). *"Vocal tract area function extraction using ultrasound for articulatory speech synthesis"*, Proceedings of the Speech synthesis workshop (SSW), pp. 90-95, Budapest, Hungary.

[4] **Mohapatra, D.**, Zappi, V., & Fels, S. (2020). *"A comparative study of two-dimensional vocal tract acoustic modeling based on Finite-Difference Time-Domain methods"*, International seminar on speech production (ISSP), pp. 154-157, Rhode Island, USA.

[3] **Mohapatra, D.**, Zappi, V., & Fels, S. (2019). *"An extended two-dimensional vocal tract model for fast acoustic simulation of single-axis symmetric three-dimensional tubes"*, Interspeech, pp. 3760-3764, Graz, Austria.

[2] **Mohapatra, D.**, & Fels, S. (2018). *"Limitations of source-filter coupling in phonation"*, Proceedings of the Acoustic week in Canada (AWC), pp. 60-61, British Columbia, Canada.

[1] Saha, P., **Mohapatra, D.**, Srungarapu, P., & Fels, S. (2018) *"Sound-Stream II: Towards real-time Gesture Controlled articulatory sound synthesis"*, Proceedings of the Acoustic week in Canada (AWC), pp. 58-59, British Columbia, Canada.