Debasish Ray Mohapatra

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EDUCATION

University of British Columbia, Vancouver
Ph.D., Electrical and Computer Engineering
- Advisor: Dr. Sidney Fels, P.Eng.

University of British Columbia, Vancouver — Apr 2021
M.A.Sc., Electrical and Computer Engineering
- Thesis: Talking Tube - A novel approach for vocal tract acoustic modelling using the finite-difference time-domain method.
- Advisor: Dr. Sidney Fels, P.Eng.

Siksha 'O' Anusandhan University, Bhubaneswar — Aug 2013
B.Tech., Electronics and Communication Engineering
- Project: Image segmentation based on mutual information
- Advisor: Sunita Samant, Ph.D.

EMPLOYMENT

Tata Consultancy Services (TCS) — Jan 2014 - Mar 2017
Software Test Engineer
Chennai, India - 2 years | London, UK - 1 year
- Functional and regression testing of the front-end (Web app) and back-end (ETL system) applications.

RESEARCH EXPERIENCE

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

VocalTractLab, TU Dresden — Jun 2022 - Aug 2022
Visiting Research Scholar
Project: A comparative analysis of vocal tract centreline determination algorithms.
Advisor: Dr.-Ing. Peter Birkholz

TEACHING EXPERIENCE

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

FELLOWSHIPS & GRANTS

- **PhD CoLab Grant**, UBC (8000 CAD/year) — 2024-Present
  Research grant for collaborative and interdisciplinary scholarly work.

- **Interspeech Student Travel Grant**, ISCA (600 EUR) 2022
  Travel grant to attend Interspeech 2022 at Incheon, South Korea
- **UBC Language Sciences Trainee Travel Fund**, UBC (3000 CAD) 2022
  Travel fund for a short-term visit to TU Dresden, Germany
- **Graduate Student Travel Award**, UBC (500 CAD) 2022
  Travel fund to attend the Winter School in Chorin, Germany

AWARDS

- **Go Global Self-Directed Research Award**, UBC 2022
  (1500 CAD)
- **President's Academic Excellence Initiative PhD Award**, UBC 2021-2023
  (1545 CAD/year)
- **International Tuition Award**, UBC Sep 2018 - Dec 2023
  (3200 CAD/year)
- **Certification of Appreciation for outstanding contribution**, TCS 2015

CONFERENCE WORKSHOP PROCEEDINGS

[8] Mohapatra, D., Zappi, V., Fels, S. (2024). "2.5D Vocal Tract Modeling: Bridging low-dimensional efficiency with 3D accuracy," Proc. of Interspeech (INTERSPEECH'24), pp. 17-21, Kos Island, Greece.

[7] Wu, R., Mohapatra, D., Fels, S. (2024). "Modeling vocal tract like acoustic tubes using the immersed boundary method," Proc. of Interspeech (INTERSPEECH'24), pp. 3415-3419, Kos Island, Greece.

[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," Proc. of Interspeech (INTERSPEECH'23), pp. 764-768, Incheon, South Korea.

[5] Mohapatra, D., Saha, P., Liu, Y., Gick, B., & Fels, S. (2021). "Vocal tract area function extraction using ultrasound for articulatory speech synthesis," Proc. of Speech Synthesis Workshop (SSW'21), 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'20), 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," Proc. of Interspeech (INTERSPEECH'19), pp. 3760-3764, Graz, Austria.

[2] Mohapatra, D., & Fels, S. (2018). "Limitations of source-filter coupling in phonation," Proc. of the Acoustic Week in Canada (AWC'18), pp. 60-61, British Columbia, Canada.

[1] Saha, P., Mohapatra, D., Srungarapu, P., & Fels, S. (2018) "Sound-Stream: Towards real-time Gesture Controlled articulatory sound synthesis," Proc. of the Acoustic Week in Canada (AWC'18), pp. 58-59, British Columbia, Canada.

PROFESSIONAL SERVICES

- Journal Reviewing: Archives of Acoustics, Acta Acustica

MISCELLANEOUS

Students Mentored

- Rongshuai Wu, M.A.Sc., University of British Columbia

Leadership & Volunteer

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