

I am a Ph.D. graduate from the National University of Singapore (NUS). My research interests lie at the intersection of generative AI models and interaction design for audio signals. I am passionate about bridging the gap between technology and creativity by designing and implementing intelligent interactive tools.

I also have ~15 years of software engineering experience. I have built and architected solutions for financial institutions such as Credit Suisse and Lehman Brothers and consulting organizations such as Capgemini and Oliver Wyman.

I co-founded the Women Who Code (WWCode) network in Singapore, a platform and community for women and underrepresented groups in technology to stay connected and advance our careers.

## EDUCATION

2020 – 2024    **Ph.D.**, Department of Communications and New Media, **National University of Singapore, Singapore**  
2000 – 2004    **Bachelor of Electronics & Telecommunications Engineering**, University of Pune, **India**

## PUBLICATIONS

- **Kamath, P.**, Gupta, C., & Nanayakkara, S. MorphFader: Enabling Fine-grained Controllable Morphing with Text-to-Audio Models. In Proceedings of the **IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)**, pp. 1-5, **2025**. [Demo Link](#).
- **Kamath, P.**, Gupta, C., Wyse, L., Nanayakkara, S. Example-Based Framework for Perceptually Guided Audio Texture Generation. In **IEEE/ACM Transactions on Audio, Speech, and Language Processing (IEEE TASLP)**, vol. 32, pp. 2555-2565, 2024. [Demo Link](#).
- **Kamath, P.**, Morreale, Fabio., Wei, Y., Nanayakkara, S. Sound Designer-Generative AI Interactions: Towards Designing Creative Support Tools for Professional Sound Designers. In Proceedings of the **CHI Conference on Human Factors in Computing Systems (CHI)**. Association for Computing Machinery, New York, NY, USA, Article 730, 1–17, 2024. [Demo Link](#).
- **Kamath, P.**, Li, Z., Gupta, C., Jaidka, K., Nanayakkara, S., & Wyse, L. Evaluating Descriptive Quality of AI-Generated Audio Using Image-Schemas. In Proceedings of the 28th International Conference on **Intelligent User Interfaces (IUI)**. Association for Computing Machinery, New York, NY, USA, 621–632, 2023. [Demo Link](#).
- Gupta, C. \*, **Kamath, P. \***, Wei, Y., Li, Z., Nanayakkara, S., Wyse, L. Towards Controllable Audio Texture Morphing. In Proceedings of the **IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)**, Rhodes Island, Greece, pp. 1-5, 2023. [Demo Link](#).  
\*Denotes equal Contribution
- Gupta, C., Wei, Y., Gong, Z., **Kamath, P.**, Li, Z., Wyse, L. Parameter sensitivity of deep feature-based evaluation metrics for audio textures. In Proceedings of 23<sup>rd</sup> **International Society for Music Information Retrieval (ISMIR)**, pp. 462-468, 2022.
- Wyse, L., **Kamath, P.**, & Gupta, C. Sound Model Factory: An Integrated System Architecture for Generative Audio Modelling. In **International Conference on Computational Intelligence in Music, Sound, Art, and Design** (Part of EvoStar) (pp. 308-322). *Springer, Cham*. 2022.
- Gupta, C., **Kamath, P.**, Wyse, L. Signal Representations for Synthesizing Audio Textures with Generative Adversarial Networks. In Proceedings of **18<sup>th</sup> Sound and Music Computing Conference (SMC)**. 2021.

## TECHNICAL SKILLS

**Deep Learning Architectures:** Generative Adversarial Networks (GAN; such as Progressive GANs and StyleGANs), Latent Diffusion Models (Text-to-Audio Models), and Transformers. Experience training GANs and Transformers from scratch.

**Data/AI:** Python, PyTorch, Sklearn, Pandas, Numpy, Scipy, Librosa, Streamlit.

**Middle Tier & DB:** Java, Spring Framework, Spring Boot, Kafka, Hibernate, Elastic Search, Coherence, Hazelcast, SQL.

**Javascript:** Node.js, Vue.js, Highcharts, Tensorflow.js, JQuery, Bootstrap.

**Cloud/Infrastructure:** Amazon Web Services (*AWS Certified Solutions Architect*), Docker, Linux, Unix shell scripting.

## INVITED TALKS

- **(Invited Seminar) September'24:** Presented at a Hearing Seminar at **CCRMA at Stanford University**. [Link](#).
- **(Invited Talk) March'23:** NUS School of Computing [Women in Technology forum](#) on International Women's Day.

## AWARDS

- **Ranked 3<sup>rd</sup>** in the DCASE Task 7 Foley Sound Synthesis Challenge in 2023
- "Special Recognition for Outstanding Review" at **CHI'24, CHI'25, and UIST'24**
- **Best Paper Award** at gCON'20, Department of Communications and New Media, FASS, NUS
- **Gary Marsden Travel Award** awarded by **ACM SIGCHI**, to present my paper at IUI'23 in Sydney

## INDUSTRY EXPERIENCE

- 2025 – 2025 **Senior Solutions Architect, NVIDIA AI Technology Center, NVIDIA, Singapore**
- Applied AI Research Scientist for NVIDIA's collaborations with industry & higher educational institutions in Singapore.
  - Industry collaborations include fine-tuning vision language models for nutrition estimation, summarization, and optical character recognition.
  - Industry advisor for 2 PhD students at the SITxNVIDIA Joint Centre (SNAIC) Singapore.
- 2024 – 2024 **Research Scientist, Augmented Human Lab/Center for Holistic Inquiry into Lifelong Learning**
- Designed and implemented AI algorithms for lecture video summarization and audio-based touch or haptic signal design.
- 2019 – 2020 **Lead Software Engineer, Oliver Wyman Digital**
- Architected and developed financial and trading solutions for Oliver Wyman's clients in the banking and mining sectors.
- 2017 – 2020 **Director, Women Who Code Singapore**
- Co-founded the Women Who Code (WWCode) network in Singapore in January 2017, a platform for women and underrepresented groups in technology to stay connected and advance their careers.
  - Designed workshops, hackathons, and talks/panels for the WWCode community.
- 2016 – 2018 **Engineering Manager (Vice President), Client Technology Solutions at Credit Suisse, Singapore**
- Built and managed up to 30 member-sized software engineering teams in India and Mexico to develop products such as Client Enablement (CET), Research Readership capture, and Access. Architected data pipelines using Apache Kafka and Elastic Search.
  - Conceptualized product solutions and drove end-user conversations in the Asia Pacific Region.
- 2012 – 2015 **Team Lead (Assistant Vice President), Client Technology Solutions at Credit Suisse, Singapore**
- Responsible for design, architecture, technology selection, and development of eChannel Platform (ECP/'one bank' Platform), a multi-tiered front-end content aggregation framework hosting CSPlus
  - Designed and conducted experiments for distributed caching technologies to select Hazelcast as the best alternative caching strategy to replace Coherence
- 2010 – 2012 **Senior Developer, Client Technology Solutions at Credit Suisse, Singapore**
- Developed ECP, a front-end content aggregation framework, as a micro-service-driven multi-tiered enterprise application. Built and managed a 15-member offshore team in India
- 2008 – 2010 **Developer, Derivatives IT at Credit Suisse, Singapore**
- Developed a trade matching tool, used to match Credit Default Swaps using Drools for rules management and JBPM for workflow management
- 2008 – 2008 **Developer at Lehman Brothers, India**
- Lead developer for Sales Opportunity Management system and Client Relationship Management.
- 2004 – 2008 **Developer at Capgemini, India**
- Developed and maintained applications using the Vignette application portal

## TEACHING AND RESEARCH EXPERIENCE

- 2022 – 2022 **Graduate Tutor (IS3251 Principles of Technology Entrepreneurship), Department of Information Systems & Analytics (School of Computing, NUS) (Semester 1, 22/23)**
- 2020 – 2022 **Research Assistant, Art & Creativity Lab, Department of Communications & New Media (NUS)**

## SERVICE

- Member of Sustainability Organization at CHI'24
- Reviewer for ICASSP'25, IJCNN'25, CHI'25, CHI'24, UIST'24, DAFx'23, ICIS'23, JNMR.
- Chairperson and Tech. Director at gCON'21: FASS CNM Flagship Graduate Conference.

## VOLUNTEER EXPERIENCE & CAUSES

Volunteer **Engineers.sg** (2018– 2021); Mentor **Junior Dev SG** (2018 – 2019); TechLead **TechLadies Bootcamp#6** (2020); Developer Relations **YOW! Conferences & Depth First Workshops and Conferences** (2018 – 2019);

## PERSONAL DETAILS

**Citizenship:** Singapore

**Other Interests:** [Generative Art/Math Art](#); [Painter in Oils](#);