Purnima Kamath, +65 9730 6791

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PhD candidate at the National University of Singapore (NUS) with 15 years of prior industry experience developing software in various roles. Current research interests are at the intersection of human-computer interaction and deep learning for the purpose of sound design. Passionate about bridging the gap between arts and technology by building accessible tools for creativity.

Co-founded the Women Who Code (WWCode) network in Singapore, a platform for women and under-represented groups in technology to step up, upskill, and showcase our capabilities at meetups and conferences. Have built a network with companies to drive the importance of diversity and have created collaboration opportunities.

EDUCATION

2020 –   **Ph.D.**, Department of Communications and New Media**, National University of Singapore, Singapore**

2000 – 2004   **Bachelor of Electronics & Telecommunications Engineering,** Cummins College of Engineering, **Pune**, **India**

ACADEMIC PUBLICATIONS

- **Kamath, P**., Gupta, C., Wyse, L., Nanayakkara, S. An Example-Based Framework for Perceptually Guided Audio Texture Generation. *(Under Review)* - https://augmented-human-lab.github.io/audio-guided-generation
- **Kamath, P**., Morreale, Fabio., Wei, Y., Nanayakkara, S. Sound Designer-Generative AI Interactions: Towards Designing Creative Support Tools for Professional Sound Designers. *(Under Review)*
- **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 (pp. 621-632) March 2023.
- Gupta, C. [*], **Kamath, P.** [*], Wei, Y., Li, Z., Nanayakkara, S., Wyse, L. [*] Towards Controllable Audio Texture Morphing. (Accepted and pending publication at *International Conference on Acoustics, Speech and Signal Processing 2023*)
  *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 *International Society for Music Information Retrieval.* 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 Sound and Music Computing Conference (SMC)* 2021

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)**
  - Instrumental in building proof of concepts using audio signal processing and deep learning frameworks which led to 3 co-authored publications.
  - An integral part of the research team conducting listening tests on crowdsourced platforms such as Amazon's Mechanical Turk.
  - Responsible to interact and liaise with the department's ethics review committee for the research lab.

GRANTS AND AWARDS

- Ranked 3rd in the DCASE Task 7 Foley Sound Synthesis Challenge in 2023
- Recipient of the Association of Computing Machinery (ACM) SIGCHI Gary Marsden Travel Award (GMTA) to attend and present a paper at the Intelligent User Interfaces (IUI) 2023 conference in Sydney, Australia

SERVICE

- Reviewer for conferences such as Human Factors in Computing Systems (CHI) 2024; Digital Audio Effects (DAFx) 2023; and International Conference on Information Systems (ICIS) 2023.
- Student volunteer and Assistant to Sustainability Chairs at CHI 2024

INDUSTRY EXPERIENCE

2019 –2020   **Lead Software Engineer, Oliver Wyman Digital**
- Responsible for architecting and developing 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 under-represented groups in technology to step up, upskill, and showcase their capabilities at meetups and conferences.
- Designed workshops, talks, and panels to bring the latest in technology space to the WWCode community.
- Hosted multiple first-time speakers at our meetups and provided opportunities to have them speak at conferences.
- Co-hosted and organized hackathons and conferences for the Singapore network.

2018 – 2019   **Developer Relations, YOW! Conference & Depth First workshops**
- Responsible for building the YOW! Developer community and organizing the yearly conference in Singapore. Collaborated with various User Group partners in Singapore such as Singapore Java UG, AgileSg, and TechTalks communities.
- Responsible for collaborating with GovTech (Singapore Government's technology arm)

2016 – 2018   **Vice President, Client Technology Solutions at Credit Suisse, Singapore**
- Built and managed software engineering teams in India and Mexico to develop products such as Client Enablement (CET), Research Readership capture and Research Access
- Responsible for understanding requirements and pain points, conceptualizing product solutions, and driving end-user conversations in the Asia Pacific Region.
- Designed and implemented data capture pipeline integrating technologies such as Apache Kafka and Elastic Search.
- Designed Research Access as a MiFID II solution to control the firm's institutional client access to the Research platform.

2012 – 2015   **Assistant Vice President, Client Technology Solutions at Credit Suisse, Singapore**
- Responsible for design, technology selection, and development of eChannel Platform (ECP/'one bank' Platform), a multi-tiered front-end content aggregation framework hosting CSPlus
- Selected Hazelcast after extensive analysis, 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, which is a micro-service-driven multi-tiered enterprise application. Subject matter expert and single point of contact for ECP in the region.
- 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 system using Extjs, Spring, Hibernate & Weblogic

2004 – 2008   **Developer at Capgemini, India**
- Developed and maintained applications using the Vignette application portal

VOLUNTEER EXPERIENCE & CAUSES

2018 – 2021   **Volunteer, Engineers.sg**
- Engineers.sg is a voluntary organization that helps record and document all technology events happening in Singapore. The website (https://engineers.sg) has a curated list of videos shot by volunteers in their spare time.

2019 – 2019   **Mentor, Junior Dev SG**
- Mentored a group of 4 junior women engineers in the second batch of the Junior Dev SG mentoring program, advising them both as a group as well as 1-1.

2020 – 2020   **Tech Lead, TechLadies Bootcamp#6**

          -   **TechLadies** (https://techladies.co) is a community in Asia that supports women with the network, education, and mentorship for their careers in technical roles. I led a team of 8 volunteers to mentor newcomers in the technology industry by helping them build solutions for various non-profit organizations.

TECHNICAL SKILLS

Data/Deep Learning: PyTorch, Pandas, Numpy

Middle Tier & DB: Python, Java, JEE (Servlets, JSP, JDBC, JMS), Spring Framework, Spring Boot, Apache Kafka, Hibernate, Elastic Search, Coherence, Hazelcast, Apache CXF, OBPM, ILog JRules, SQL (Oracle, Sybase)

Javascript: Node.js, Vue.js, Highcharts,Tensorflow.js, JQuery, Angular, Backbone, Bootstrap, Handlebars, Extjs, AJAX/DWR

Servers/Infrastructure: Docker, Unix shell scripting, Weblogic 8.1/9.2/10.3, iPlanet