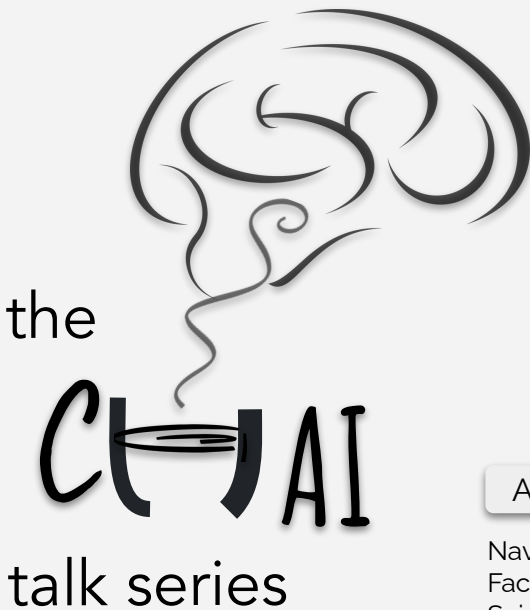# Improving Breathing Problem Detection:
A New Approach for Better Patient Care

In my talk, I will discuss how we've improved the way we monitor and detect breathing problems, especially in older people who might be very sick. Right now, it's hard for machines to tell how bad these problems are, which makes it tricky for doctors to figure out what to do. So, we came up with a new way to look at all the numbers that machines measure, like how fast someone's breathing and how much oxygen is in their blood. We used fancy math to make sense of these numbers in real-time, comparing different methods to see which one works best. We tested our ideas with real patient data and found that our new method can predict how bad someone's breathing problem is pretty accurately. We'll also talk about how we can use this information to give doctors a heads-up when someone's having trouble breathing, which can help them take action earlier and hopefully make things better for the patient.

the

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About the Speaker

Navchetan Awasthi is an Assistant Professor at the Faculty of Science, Mathematics, and Computer Science, Informatics Institute, University of Amsterdam, and the Department of Biomedical Engineering and Physics, Amsterdam UMC, Amsterdam. Prior to joining the University of Amsterdam, he completed Ph.D. in Medical Imaging from the Indian Institute of Science, Bangalore, under the guidance of Prof. Phaneendra K. Yalavarthy, contributing to advancements in photoacoustic image reconstruction. Following this, he was a Postdoctoral Fellow at Eindhoven University of Technology, collaborating with Professors Josien Pluim and Richard Lopata, where he applied his expertise in deep learning to precision imaging for medical applications, particularly focusing on ultrasound and photoacoustic imaging. Further enriching his expertise, he also worked as a Research Fellow at the Cardiovascular Research Center at Massachusetts General Hospital, Harvard Medical School, USA, where he focused on deep learning-based techniques for cardiovascular signal processing. His academic journey began with a bachelor's degree in Electronics and Communication Engineering from the National Institute of Technology, Jalandhar, India, followed by a master's degree in Computational Science from the Indian Institute of Science, Bangalore, where he concentrated on sparse recovery-based techniques for photoacoustic tomography. His diverse academic background and extensive experience in medical imaging and signal processing underscore his commitment to driving innovation and advancing the field, with a primary focus on developing advanced techniques for processing, analyzing, and reconstructing medical images and signals.

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