



Seminar Announcement

Organized within the course “Biomedical Signal and Image Processing”, Master Course in Biomedical Engineering,
and open to all interested parties

24 November 2025, 14:30 – 16:30, Engineering Faculty, Room 155/8
Online at the [LINK](#)

Forward and Inverse Problems in Electrocardiography: Modeling the ECG **Dr. Peter Van Dam**

Jagiellonian University Medical College, Krakow, Poland

Abstract: The electrocardiogram (ECG) measured on the body surface shows beat-by-beat the electrical functioning of the heart. ECG consists of a number of electrical time signals that are caused by the currents produced by the myocardial cells. ECG signals require clinical interpretation, which in the current clinical practice is close to an art. Modeling the ECG, i.e., having a model of the heart that simulates the electrical processes of the myocardium and calculates the ECG signals on the body surface, can help to understand these waveforms in a cause-and-effect relationship. This is the major subject of my current and past research, which I will introduce during this talk.



Bio: Dr Peter van Dam is a scientist and lecturer specializing in cardiac modeling, electrocardiographic diagnostics, and the development of innovative educational and clinical tools based on heart signal analysis and 3D imaging. In 2025, he obtained his postdoctoral degree (habilitation) in medical sciences at the Jagiellonian University Medical College. Peter van Dam’s professional experience spans both academia and the medical industry. He began his career in 1997 as a senior scientist at Vitatron/Medtronic. Since 2009, he has been affiliated with Peacs BV (Chief Scientific Officer). In 2020, he also founded ECG-Excellence. In academia, he has worked at Radboud University, at UCLA, and currently conducts research and teaching at UMC Utrecht and UT Twente. Since 2023, he has also collaborated with the Jagiellonian University Medical College, Center for Digital Medicine and Robotics. Since 2024, he has also been a specialist at the Laboratory of Functional and Virtual Medical 3D Imaging (3D-FM) at the University Hospital in Kraków.

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