Abstract: We are experiencing unprecedented access to multiple data modalities, often at massive scale. In various disciplines, the information about the same phenomenon is being acquired with a multitude of different sensors. The availability of these high-dimensional and heterogeneous data opens up new possibilities in information processing along with entirely new challenges. In this talk, we discuss some of the state-of-the-art approaches in addressing these problems, with the focus on representation learning, sparse coding and Bayesian inference, with applications in remote sensing and scene analysis from hyperspectral data. The second part of the talk will address applications in art investigation. Art conservation science relies increasingly on a multidisciplinary research including new sensing technologies and techniques for analysing multimodal data. Examples will be shown from the ongoing restoration of Van Eyck’s masterpiece, the Ghent Altarpiece.

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