

Bachelor/Master Thesis



Technische Universität München



Fakultät für
Elektro- und Informationstechnik
Lehrstuhl für
Messsystem- und Sensortechnik

Hyperspectral Imaging of real neuronal cells

Background

Hyperspectral Imaging (HSI) is a unique technique that is able to collect a wide spectrum of light (ultraviolet, visible, near infrared) compared to conventional imaging methods which usually scan only in the visible range. Additionally HSI also collects the spectral information of each pixel which can be used for further and more precise analysis of the image.

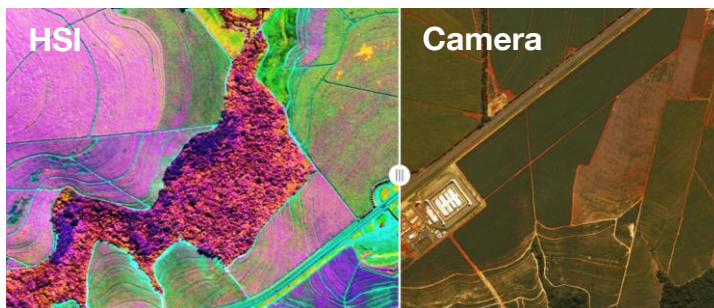


Figure 1 <https://www.gamaya.com/>

Due to recent advances HSI can also be applied down to micro- and nanometer scales. Therefore, it is able for the analysis of single cells to complex biological systems and could provide more information compared to conventional microscopy which is collecting data only in the VIS range.

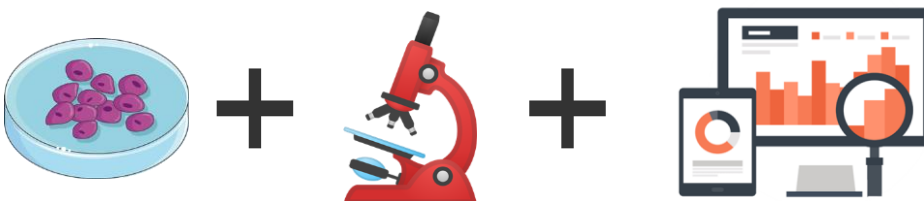
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Scope

Use the Hyperspectral Imaging System to analyze and evaluate real biological samples. Suitable innovative algorithms will be developed that enable the pre-processing, analysis and evaluation of the scanned samples.

Requirements

- Matlab coding and GUI development
- Image analysis

If you are interested for more details, please send an email to:
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