M A S T E R   T H E S I S

The timing of trees: development of an analysis tool to detect phenological events in time-series photographs of oaks

Background

In course of the PhytOakmeter-Project (https://www.uni-marburg.de/en/fb17/phytoakmeter/phytoakmeter-subprojecs), a camera monitoring platform has been established across Europe, producing time series image data of oak clones in France, Germany, and Finland. Using computer vision methods this project aims to detect phenological events, like the oak's endogenous rhythmic growth cycles, automatically.

Objectives

- Develop and optimize a software tool to detect sudden changes in the oak using image data

- Apply this software to analyze seasonal and/or geographical patterns

Work programme

- Develop image processing software for temporal image change detection between successive images (R/python)
- Develop object detection tool to track leaf area, shoot flushes and/or budding
- Analyze change in leaf area and budding over time and space and detect phenological events
- Document your processing workflow

Beginning of summer semester 2025

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