AGRICAREERNET
NETZWERK FÜR AGRARKARRIEREN

ZERTIFIKATSKURS

BILDGEBENDE SYSTEME IN DER AGRAR- UND LEBENSMITTELTECHNIK

Imaging in der Phänotypisierung

Arno Ruckelshausen

HOCHSCHULE OSNABRÜCK
UNIVERSITY OF APPLIED SCIENCES

AUFSTIEG DURCH BILDUNG >>
OFFENE HOCHSCHULEN

GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung

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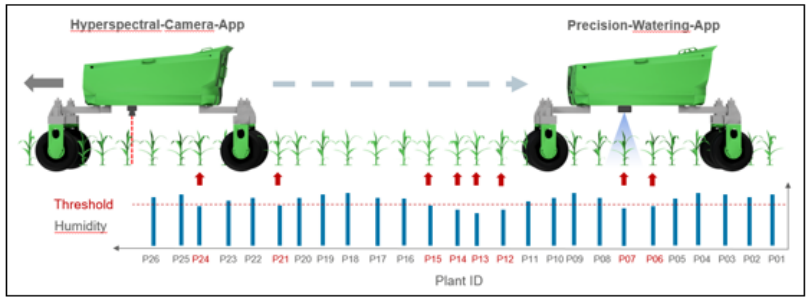
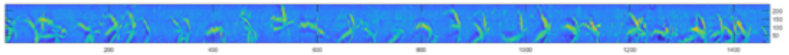
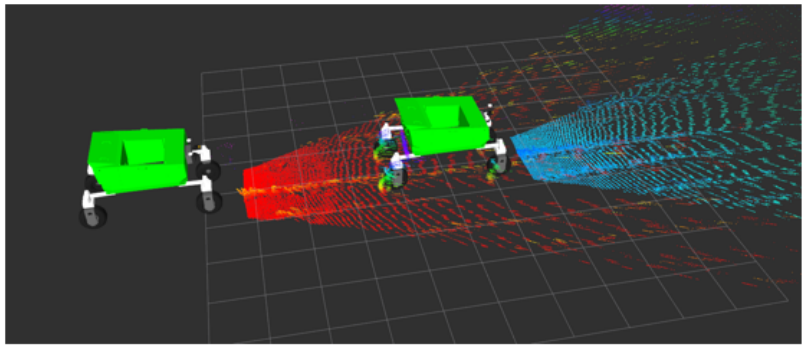
Landtechnik – Feldrobotik - Phänotypisierung







Quelle: Jan Roters, Masterarbeit, HS Osnabrück, 2018

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IMAGING IN DER PHÄNOTYPISIERUNG
UNIVERSITÄT HOHENHEIM
HOCHSCHULE OSNABRÜCK
UNIVERSITY OF APPLIED SCIENCES
GFPi
FNR
PZO PFLANZENZUCHT OBERLIMPURG
SAATEN UNION
HYBRO
DSV
UNIVERSITÄT BONN
JKI
geo-konzept
inventarisieren. kartieren. optimieren.
BreedVision

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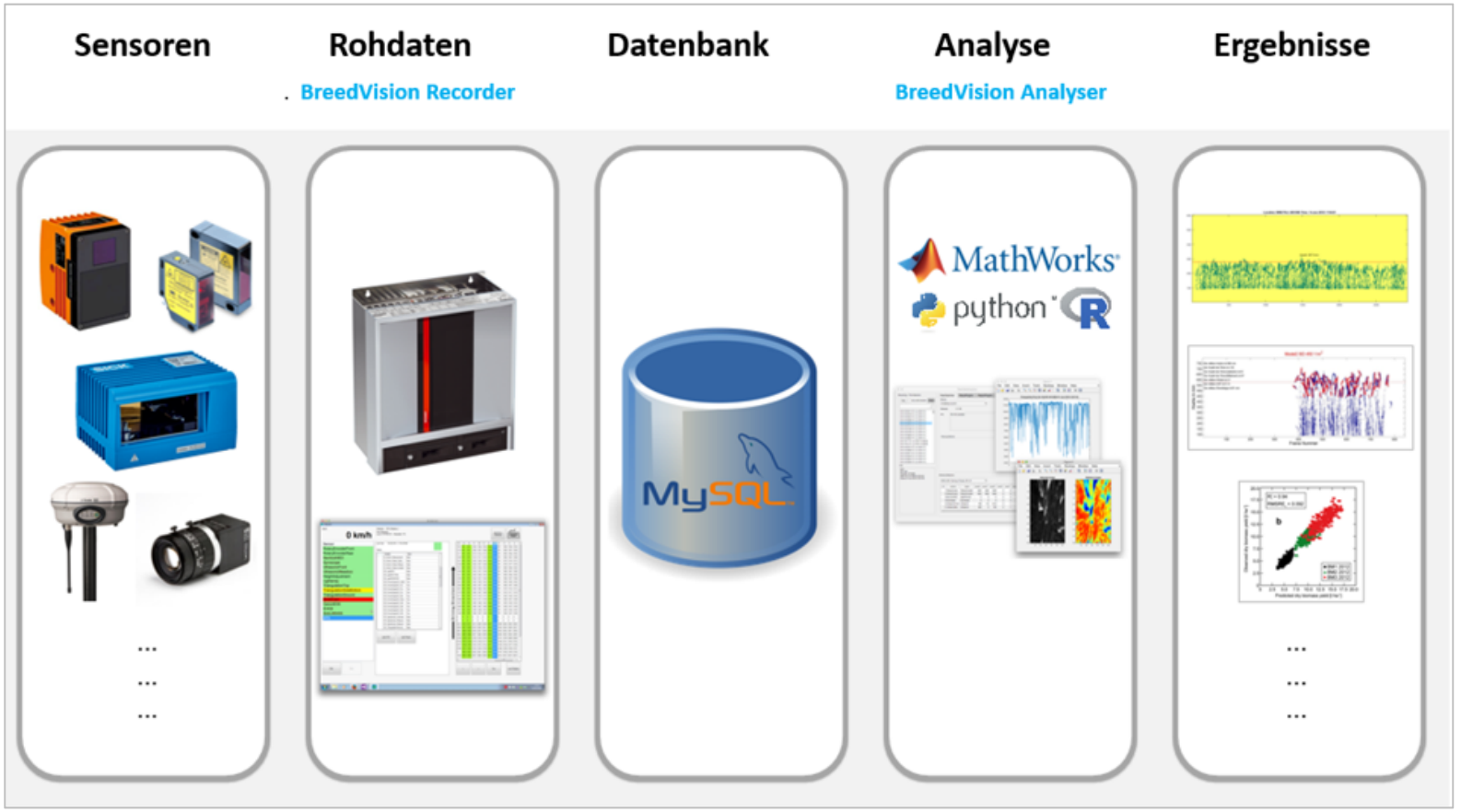
Kernbausteine: Konzept BreedVision

BreedVision



Quelle: Forschungsprojekte BreedVision, predbreed, SENSELGO

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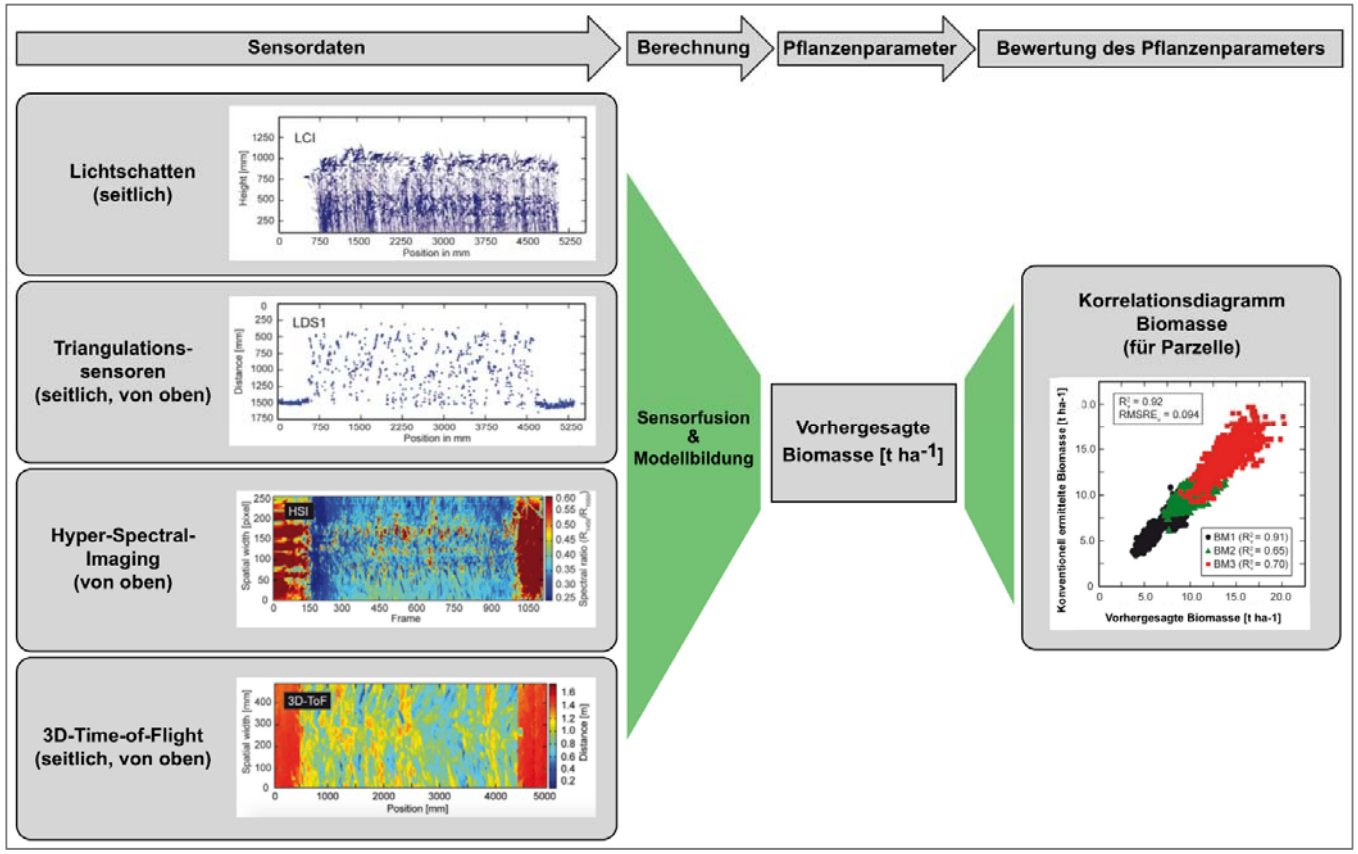
Beispiel: Feldbasierte Biomassebestimmung (Sensorfusion)



Quelle: Forschungsprojekt SENSELGO

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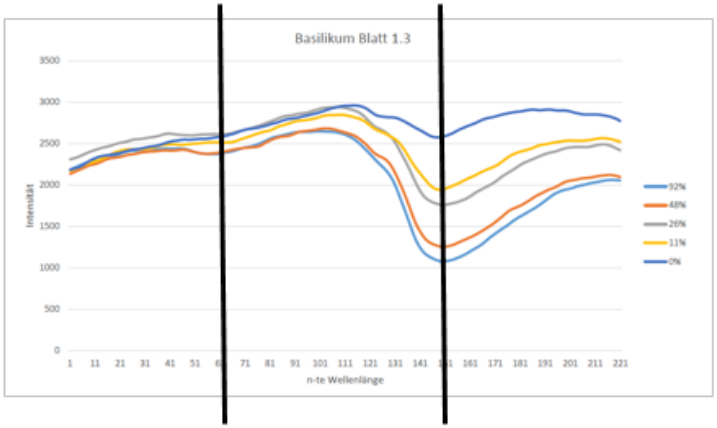
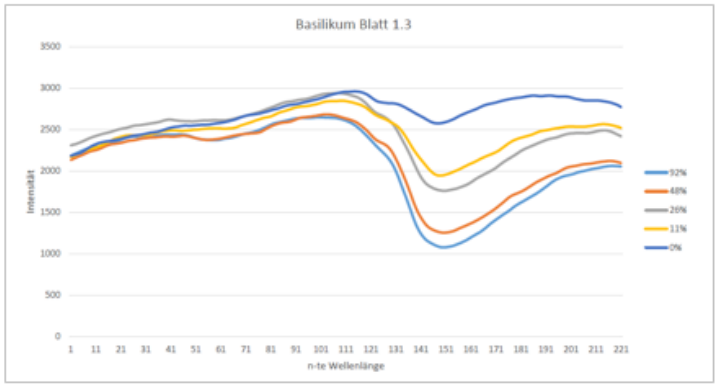
Dateninterpretion (Feuchtbestimmung von Pflanzen)

„Klassische“ Bild/Daten-Verarbeitung	Neuronale Netze („Machine Learning“)
	
+ Verständnis (Algorithmen)	- Verständnis (Algorithmen)
- Entwicklungsaufwand	- Labelling
- Vielfalt	+ Vielfalt

Quelle: Brümmer, Falz, Klodt, Peuker; Hausarbeit „Sensorsysteme, HS Osnabrück, 2019

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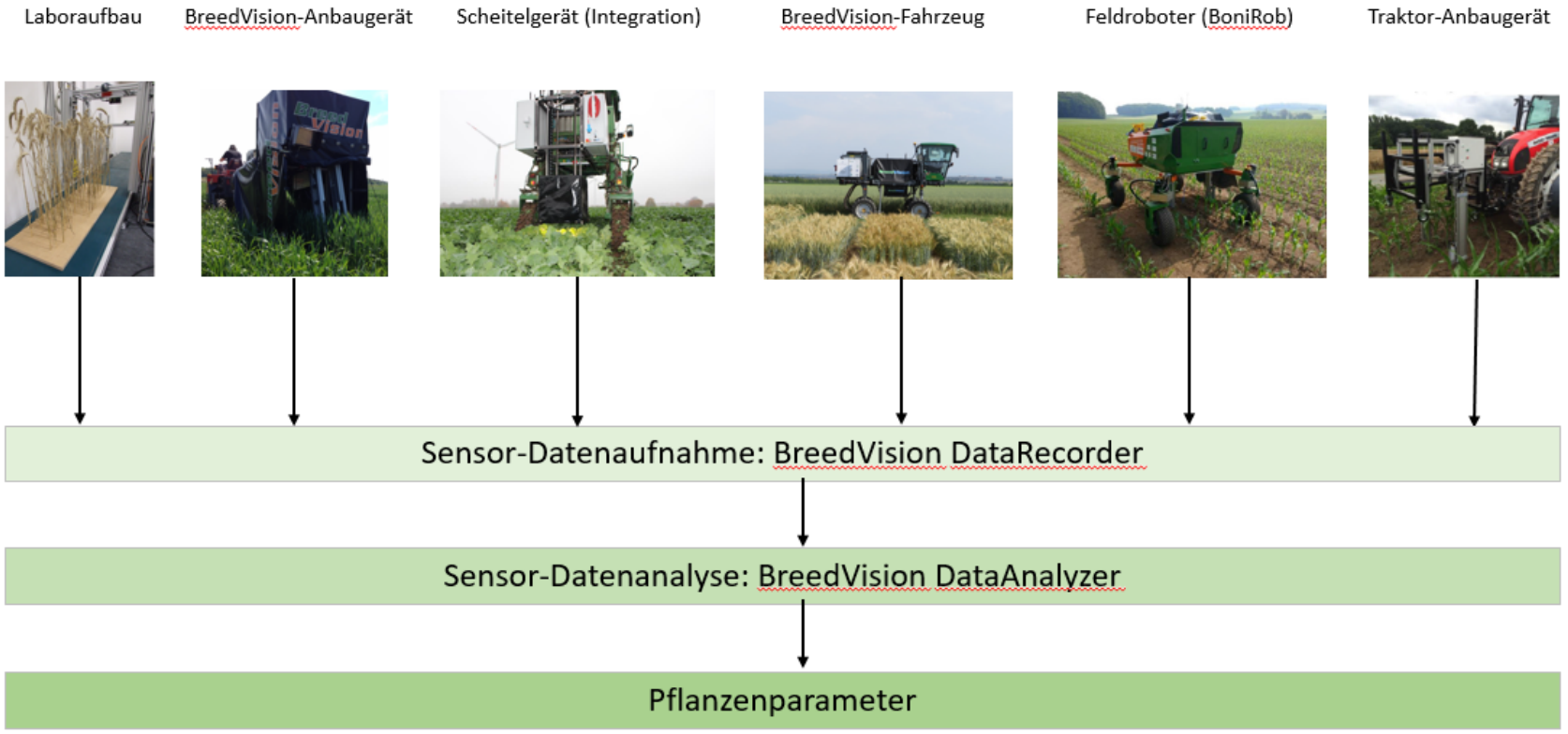
BreedVision-Konzept@Plattformen



Quelle: Hochschule Osnabrück

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BreedVision-Konzept@Plattformen

Quelle: Hochschule Osnabrück

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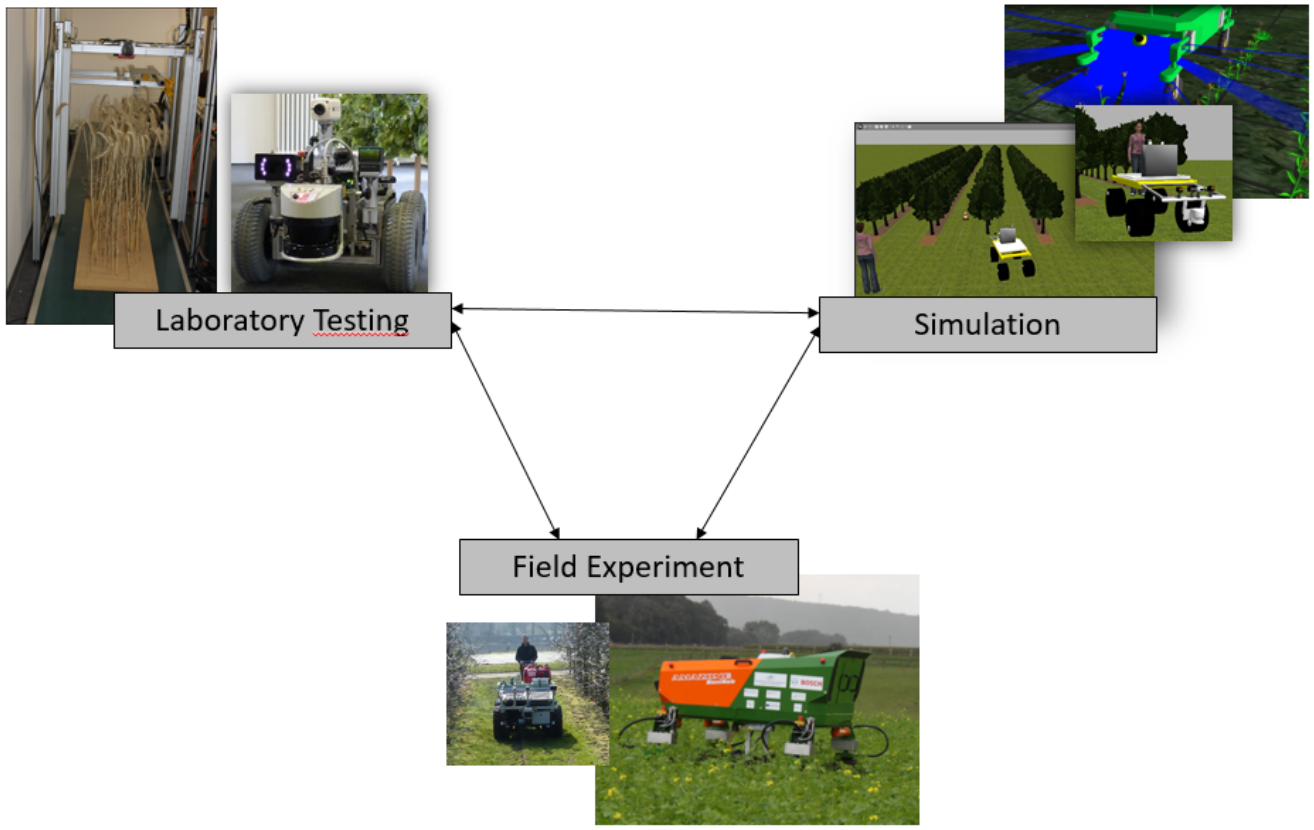
Nature in the loop: Simulation – Teststände - Feldversuch



Quelle: Hochschule Osnabrück

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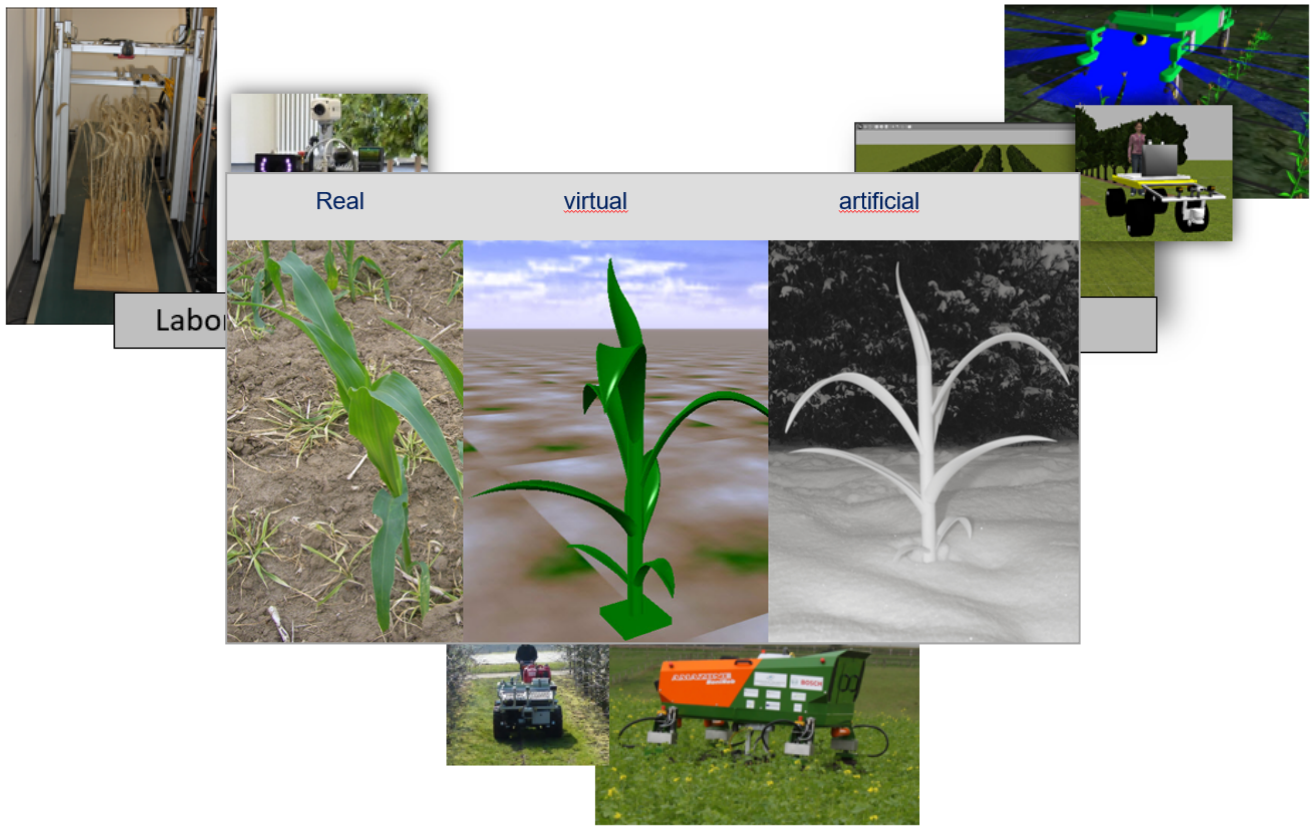
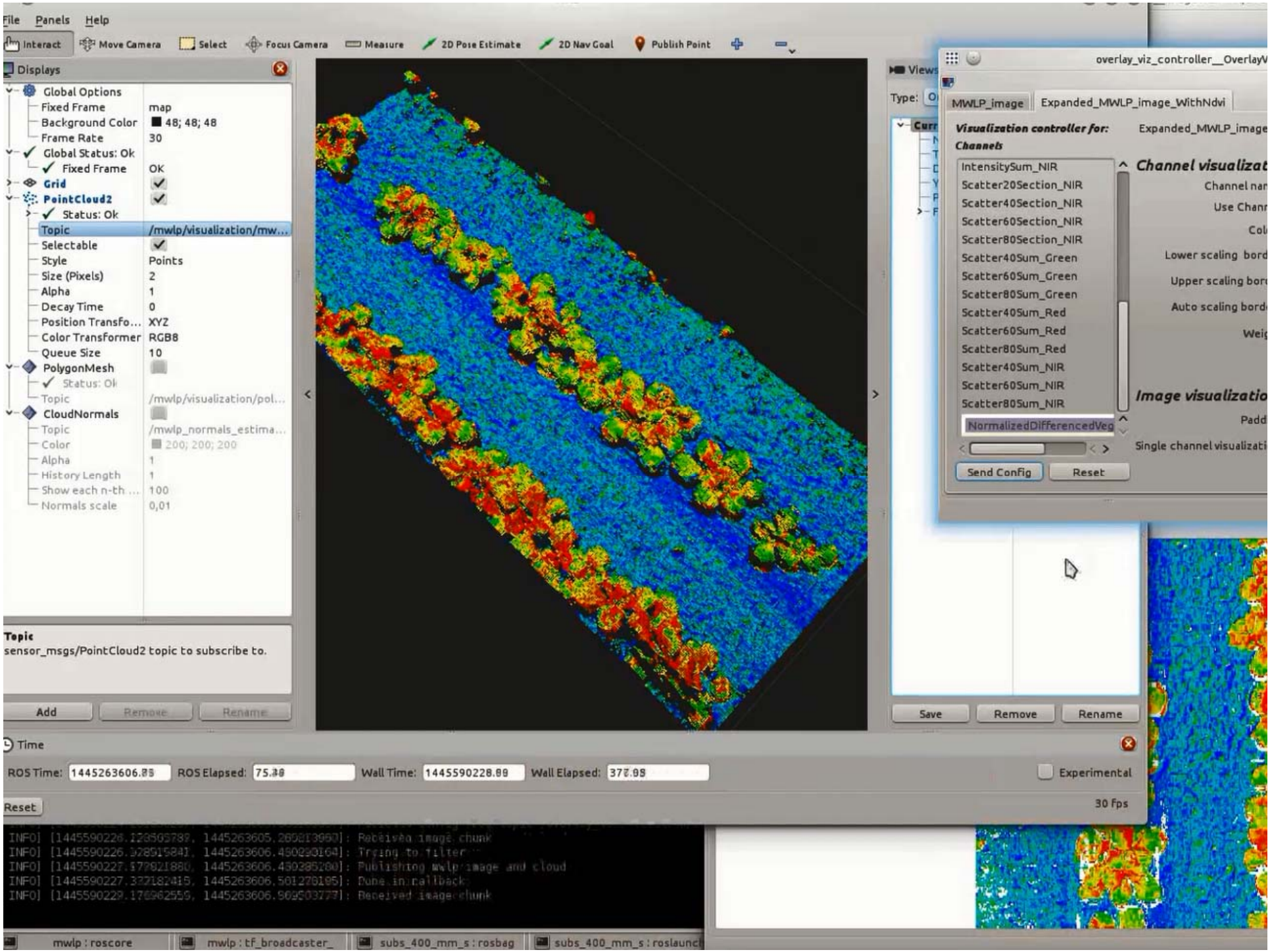
Nature in the loop: Simulation – Teststände - Feldversuch



Quelle: Hochschule Osnabrück


File Panels Help
Interact Move Camera Select Focus Camera Measure 2D Pose Estimate 2D Nav Goal Publish Point
Displays
Global Options
Fixed Frame map
Background Color 48; 48; 48
Frame Rate 30
Global Status: Ok
Fixed Frame OK
Grid
PointCloud2
Status: Ok
Topic /mwlp/visualization/mw...
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Style Points
Size (Pixels) 2
Alpha 1
Decay Time 0
Position Transfo... XYZ
Color Transformer RGB8
Queue Size 10
PolygonMesh
Topic /mwlp/visualization/pol...
CloudNormals
Topic /mwlp_normals_estima...
Color 200; 200; 200
Alpha 1
History Length 1
Show each n-th ... 100
Normals scale 0,01
Topic
sensor_msgs/PointCloud2 topic to subscribe to.
Add Remove Rename
overlay_viz_controller__OverlayV
MWLP_image Expanded_MWLP_image_WithNdvi
Visualization controller for: Expanded_MWLP_image
Channels
IntensitySum_NIR
Scatter20Section_NIR
Scatter40Section_NIR
Scatter60Section_NIR
Scatter80Section_NIR
Scatter40Sum_Green
Scatter60Sum_Green
Scatter80Sum_Green
Scatter40Sum_Red
Scatter60Sum_Red
Scatter80Sum_Red
Scatter40Sum_NIR
Scatter60Sum_NIR
Scatter80Sum_NIR
NormalizedDifferencedVeg
Send Config Reset
Channel visualizat
Image visualizatio
Save Remove Rename
Time
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ROS Elapsed: 75.
Wall Time: 1445590228.
Wall Elapsed: 377.
Experimental
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INFO] [1445590226.
INFO] [1445590227.
INFO] [1445590227.
INFO] [1445590229.
Received image chunk
Trying to filter
Publishing mwlp image and cloud
Done in callback
Received image chunk
mwlp : roscore
mwlp : tf_broadcaster_
subs_400_mm_s : rosbag
subs_400_mm_s : roslaunch