

DiSSCo Flanders 2 progress



DiSSCo Flanders 2.0

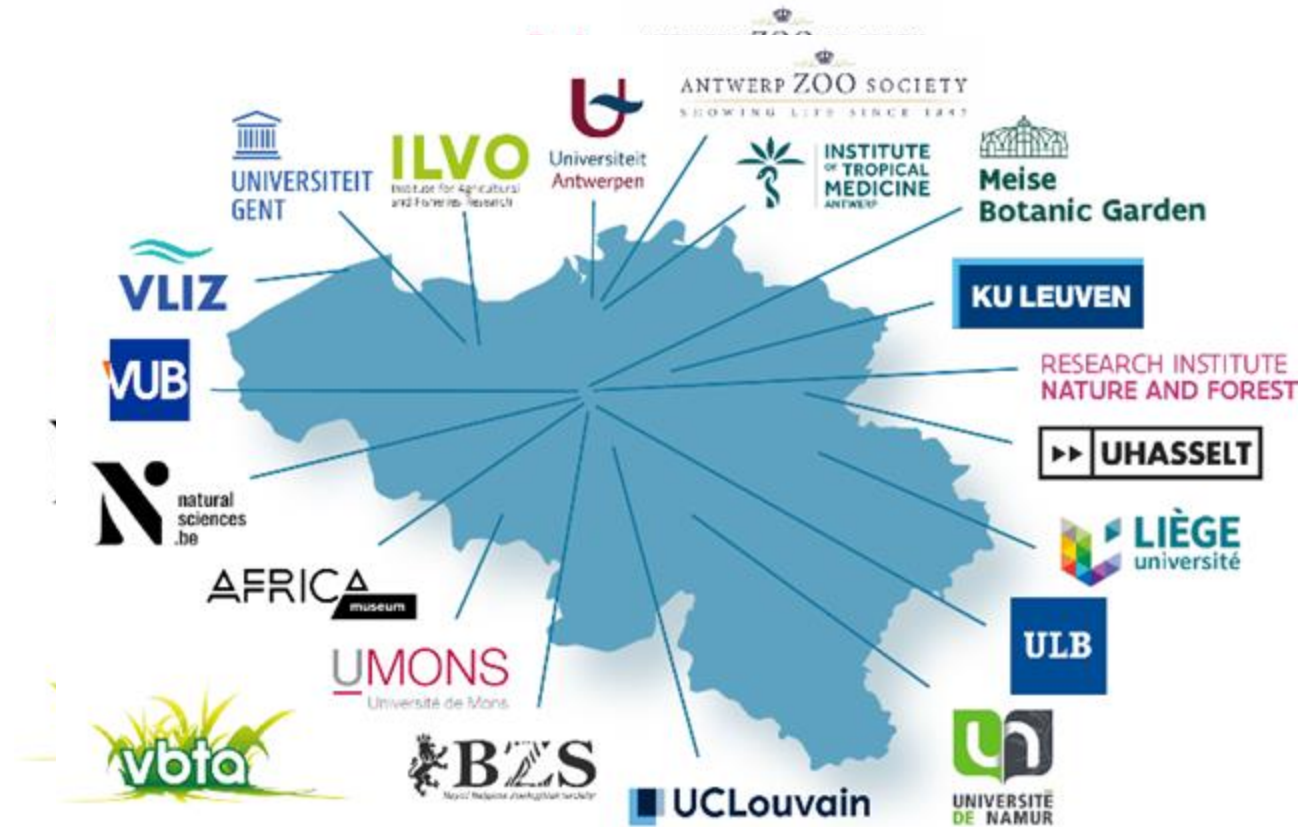
2025-2028

9 funded + 12 associated partners

- Rich collections, c. 5.8 million specimens
- Expertise: collection management, digitisation, biodiversity informatics, machine learning, citizen science, legal and ethical areas
- Education
- Collection-based research and applications
- Linked to international organisation and RIs

Main goals

- Enhance access and use of collections through services and unified policies
- Contribute to the establishment and functioning of DiSSCo RI



Objectives

Enhance collection management, access & data integration

- Improve access to digital collection data & unified access policy (CMS & data standards)
- Link digital specimens with other data streams (taxonomy, DNA sequences, literature, ...).

Develop and expand DiSSCo services

- Crowdsourcing platform: promote public interaction with collections
- Develop AI solutions for transcription, image segmentation, identification

Address ethical and legal challenges

- Develop guidelines for legal compliance and address ethical considerations (decolonization, ...)
- Offer user support, training, and documentation to enhance legal management of collections

Contribute to the transition and establishment of DiSSCo ERIC

- Participate in linked Horizon Europe projects (DiSSCo Transition, ...)
- Engage with DiSSCo Technical Team to shape the infrastructure design



WP1

Project management, outreach
and communication



WP2

Unlocking the
collections



WP3

Crowdsourcing
platform



WP4

Collections and
taxonomic expertise



WP5

Legal and
ethics



WP6

Collection enrichment
as a service



WP7

Sustainability and business plan

DiSSCo Flanders International Advisory Board installed

First meeting planned September 2026

Sabine von Mering -
MfN Berlin



Ana Rita Simoes -
MoBot / MNHN



Christophe Verbruggen -
CLARIAH / UGent



Carole Paleco - DiSSCo-
Fed / RBINS



Vincent Smith -
DiSSCo UK / NHM



Eva Alonso - DiSSCo
CSO / Naturalis



Some highlights



DiSSCover

- Meise herbarium specimens now available in DiSSCover test environment
 - <https://sandbox.dissco.tech/search?organisationName=Meise%20Botanic%20Garden>
 - 2.901.554 specimens
 - 2.844.623 successfully ingested into DiSSCo
- Data ingested from a Darwin Core archive published on Meise's IPT server:
 - https://ipt.botanicalcollections.be/resource?r=botanical_collection
- DiSSCo spotted a few data quality issues, which we subsequently resolved
 - Updated license: DiSSCo only accepts CC-BY and CC0 licenses (and not CC-BY-SA).
 - Audiovisual Core extension used to describe our images, was incorrectly set up in the IPT (CSV file settings missing quotation marks where needed - important because some taxonomic names can contain commas, which can otherwise lead to errors).
- We whitelisted DiSSCo domains on our image server to enable viewing our scans in DiSSCover
 - We block standard image requests not through whitelisted pathways, to prevent bots from taking down our image server

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Bellis perennis

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Quality/completeness indicators

MIDS Level

MIDS 0

MIDS 1

MIDS 2

Search filters

Topic Discipline

Select

Taxonomy

Select or type

Country

Select or type

Organisation

Select or type

 Meise Botanic Garden

2878277

Source System

Select or type

Type status

DOI	Specimen Name	Physical Specimen ID	Topic Discipline	Country of Origin	Date
SANDBOX/PFM-YVX-KM2	Celastraceae R. Br.	http://www.botanicalcollections.be/specimen/BR0000014847424	Botany	Mozambique	
SANDBOX/MR3-DHE-VDN	<i>Rosa canina</i> L.	http://www.botanicalcollections.be/specimen/BR0000011062486	Botany	Belgium	1958
SANDBOX/3H7-CFP-AVD	<i>Rosa canina</i> L.	http://www.botanicalcollections.be/specimen/BR0000011062561	Botany	Belgium	1897
SANDBOX/CB4-T1F-MSV	<i>Rosa canina</i> L.	http://www.botanicalcollections.be/specimen/BR0000011062530	Botany	Belgium	1976
SANDBOX/RT1-X5Q-4R7	<i>Rosa canina</i> L.	http://www.botanicalcollections.be/specimen/BR0000011062684	Botany	Belgium	1912
SANDBOX/TDV-QQ2-CNG	<i>Rubus</i> L.	http://www.botanicalcollections.be/specimen/BR5010156883698	Botany	Italy	1978
SANDBOX/7WG-K4V-Q15	<i>Rosa canina</i> L.	http://www.botanicalcollections.be/specimen/BR0000011062318	Botany	Belgium	1974
SANDBOX/SPF-GLM-FHY	<i>Rhinanthus minor</i> L.	http://www.botanicalcollections.be/specimen/BR0000036126491	Botany	France	1971
SANDBOX/N65-QXZ-RES	<i>Rosa canina</i> L.	http://www.botanicalcollections.be/specimen/BR0000011062325	Botany	Belgium	1866

Specimen found: 2878277

< 1 2 ... 399 >

CETAF ISTC AI&Robotics subgroup

ISTC Spring Meeting in Meise (May 21st - 22nd 2026)

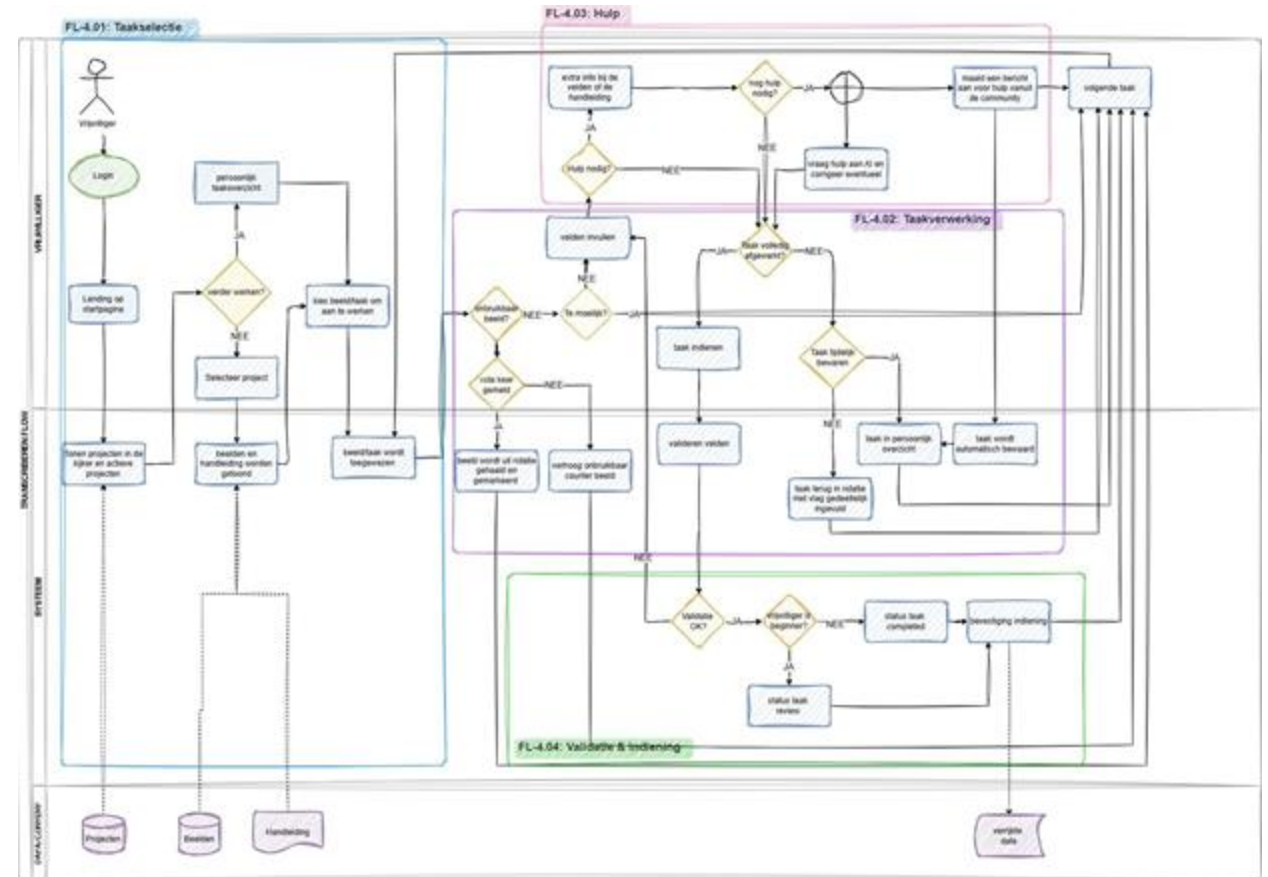


- The Information Science & Technology Commission (ISTC) facilitates collaboration between IT departments of CETAF institutions to ensure institutional interoperability through the development of common infrastructures and standards.
- AI&Robotics subgroup: led by Meise (Maarten Trekels) and NHM London (Arianna Salili-James)
- Every +- 3 months currently the subgroup is meeting:
 - * general presentations on the use of AI in collections
 - * Creating a 'best practice' guide on the storage of data on AI annotations
- TDWG Oslo: session on AI (SYM30 AI for Biodiversity Data)



- Mapped out
 - the different processes
 - userstories and requirements

- Next steps
 - finalize documentation
 - prepare tender



Zoological Information Management System (ZIMS)

GI

We are
zoo

✔ Comprehensive Animal Records

ZIMS provides a centralized repository for detailed animal records, including species information, individual animal histories, breeding data, medical records, and more. This extensive database ensures that caretakers have access to critical information at their fingertips, enabling informed decision-making and proactive care.

✔ Collection Management

Recording detailed information about each animal, such as species, sex, age, birth records, and parentage.

✔ Animal Husbandry

Tracking the care and daily management of animals, including feeding, environmental conditions, enrichment activities, enclosure details.

✔ Aquatics

Managing water quality, life support systems, and enclosures, as well as individual animals and groups.

✔ Animal Care and Welfare

Monitoring behavioral indicators and managing a cross-section of information to ensure the well-being of animals and groups.

✔ Medical Records

Managing veterinary care and medical history, including medications, treatments, surgeries, and vaccinations.

✔ Global Medical Resources

Drawing on decades of global data, ZIMS provides veterinary teams with critical insight not found anywhere else, including Anesthesia Summaries, Expected Test Results, Drug Usage Extracts, and Morbidity and Mortality Analysis.

✔ Biobanking and Sample Storage

ZIMS for Medical Sample Storage uses a visual interface to help medical staff more efficiently manage biological samples. By maintaining a link to ZIMS animal records, health status, sample collection details and more, Sample Storage adds detail that can be critical to discovering breakthroughs in animal welfare and species conservation.

✔ Population management and Studbooks

Maintaining genetic data and pedigree information for animal populations, which is essential for breeding programs and conservation efforts. ZIMS is home to the world's studbooks, including International Studbooks, regional and national association studbooks, and institutional studbooks.

✔ Research and Conservation

Supporting scientific research and conservation initiatives by providing valuable data to researchers and conservationists.

✔ Data-Driven Insights

ZIMS provides powerful analytics and reporting tools that help institutions make data-driven decisions. By analyzing trends and patterns in animal health, behavior, and reproduction, caretakers can develop more effective management strategies and contribute to scientific research.

✔ Custom Reporting and Analytics

Allowing users to generate customized reports and perform data analysis to meet their specific needs.



Earth Science community

- First meeting held 26th of January 2026
- 2 meetings / year planned ~ sharing best practices
- 16 “participating” org





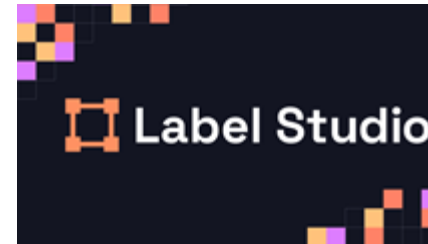
Metadata extraction & evaluation (HerbAudit)



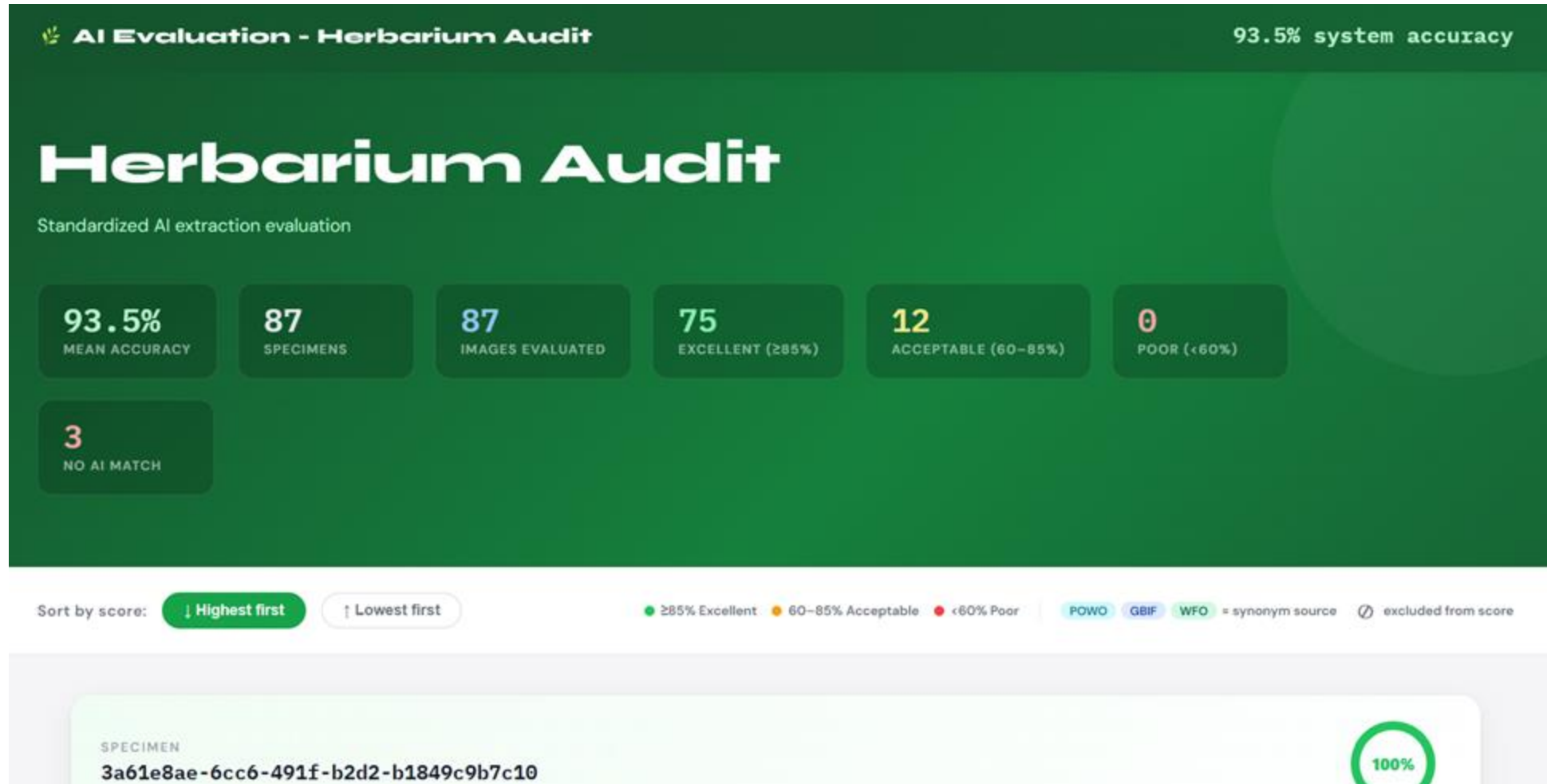
AI vs GBIF/POWO/WFO

LLM-based prompt engineering

Manual Annotation (Label Studio) vs OCR (Optical Character Recognition)



Herbaudit Interface



SPECIMEN

1582389c-972a-4511-8e91-08a8cedecf92

[View on GBIF](#)

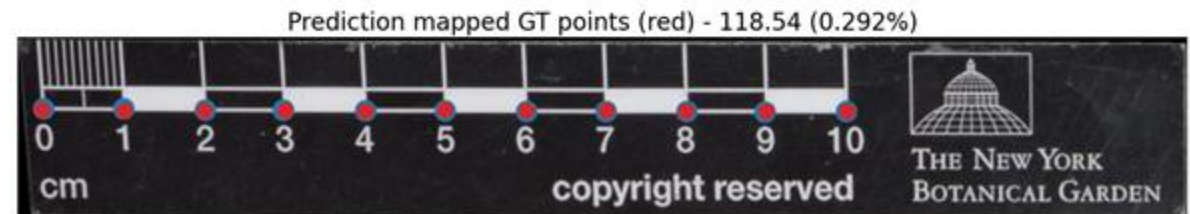
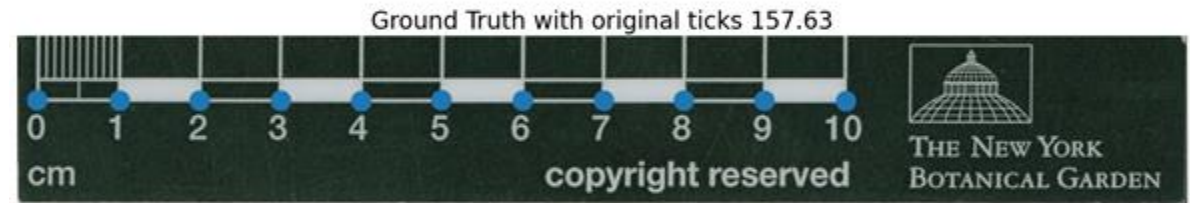
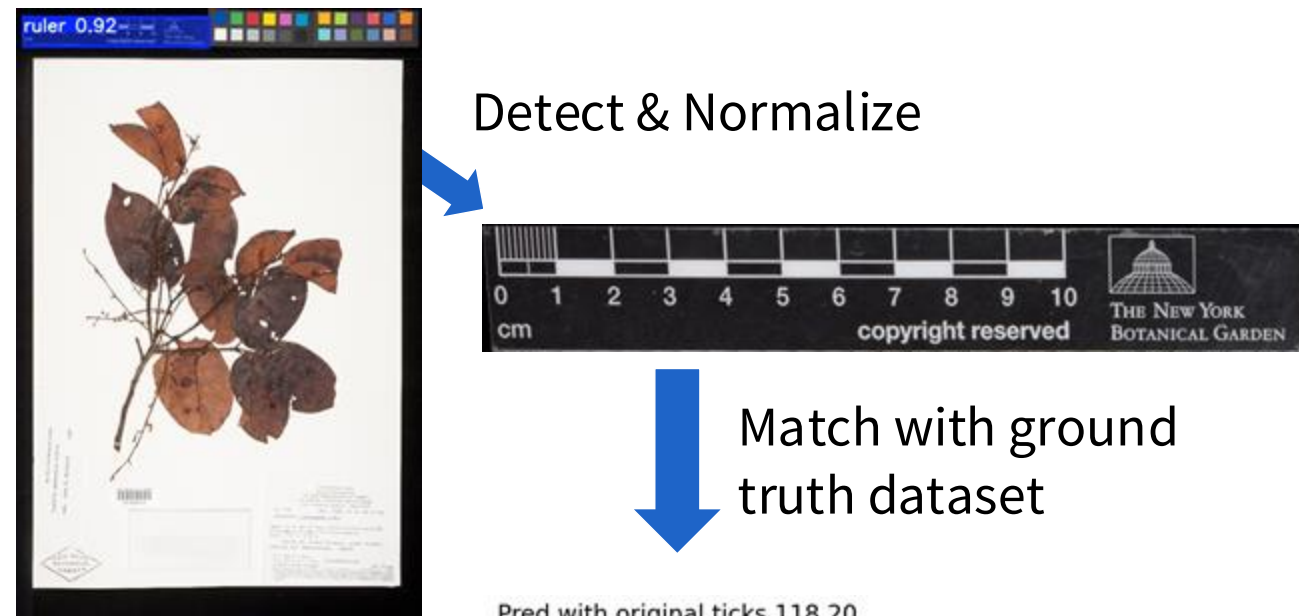
EXCELLENT

FIELD	GBIF (TRUTH)	AI EXTRACTION	METHOD	SCORE
TAXONOMY				
scientificName	Campanula fenestrellata Feer	Campanula fenestrellata Feer	Taxon-Match Binomial match	100%
Generic Name	Campanula	Campanula	Taxon-Match Binomial match	100%
specificEpithet	fenestrellata	fenestrellata	Taxon-Match Binomial match	100%
COLLECTOR				
collectedBy	Ronse A.	Anne Ronse	token-match Matched: ronse	100%
collectionDate	2002-06-09	2002-06-09	date-eval	100%
catalogNumber	BR0000005307753	530775	catalog-norm	100%
GEOGRAPHY				
country	Belgium	Belgium	cer	100%
stateProvince	nan	Flemish Brabant	N/A	—
locality	Humbeek - Sas	Humbeek-Sas	cer	100%



Length Estimation Method

1. Detect ruler on the page (YOLOv11)
2. Crop the ruler and normalize
3. Match with database of labeled rulers (CLIP)
4. Compare keypoints within best matches
5. Estimate homography & transform
6. Calculate conversion factor for ruler using ground truth tick marks



Recap: ruler detection & matching

Presented at LivingData 2025: <https://biss.pensoft.net/article/183602/>

Code & dataset: <https://github.com/kymillev/herbarium-rulers>

Own dataset - entire rulers

- 457 rulers - Annotation error 0.794%
- 11 (2.40%) no match
- Mean best match error: 0.689%
- Median best match error: 0.199 %
- 94.84 % with error < 2%
- **91.7 % with error < 1%**

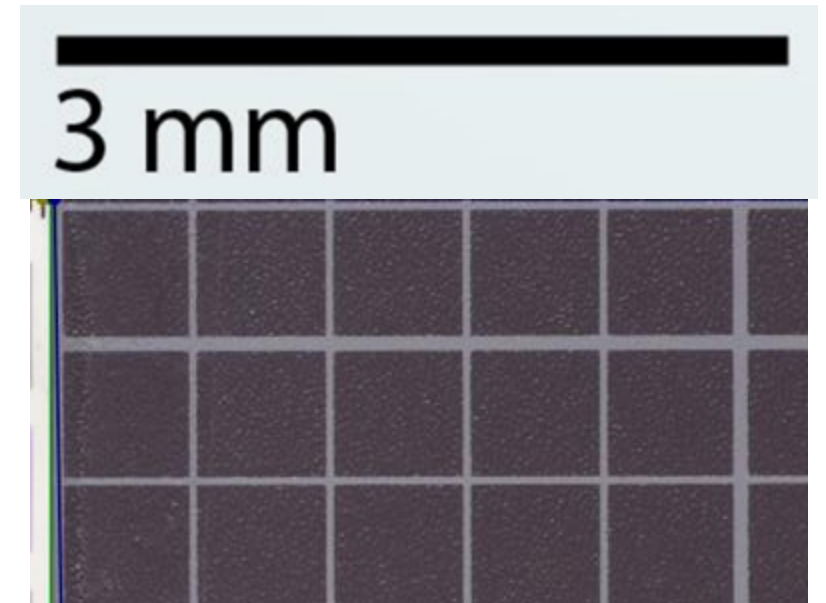
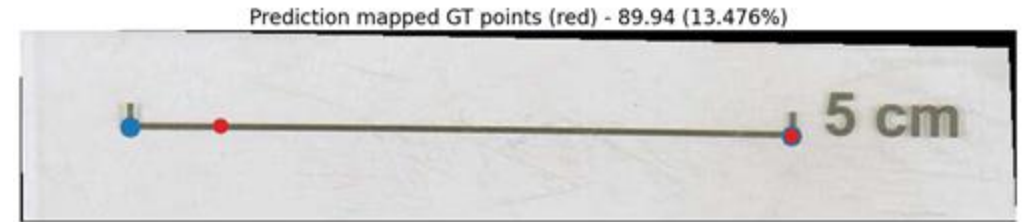
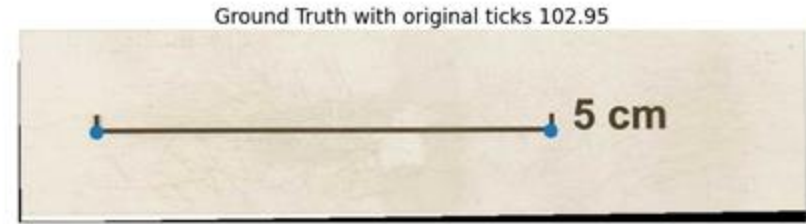
LeafMachine dataset - cropped tick marks

- 1131 rulers - Annotation error 0.8%
- 46 (4.07 %) no match
- Mean best match error: 0.324 %
- Median best match error: 0.141 %
- 99.0 % with error < 2%
- **94.7 % with error < 1%**



Expanding the method

- Current approach fails for “simple” rulers
- Need a more hierarchical approach, which uses a different method/model for a different category
- Detect ruler “category” using embeddings
 - a. “Complex” rulers (already works)
 - b. Line
 - c. Blocks
 - d. Grid
- Use traditional computer vision methods + OCR/LLM to determine length of the simple ruler types



THANK YOU

