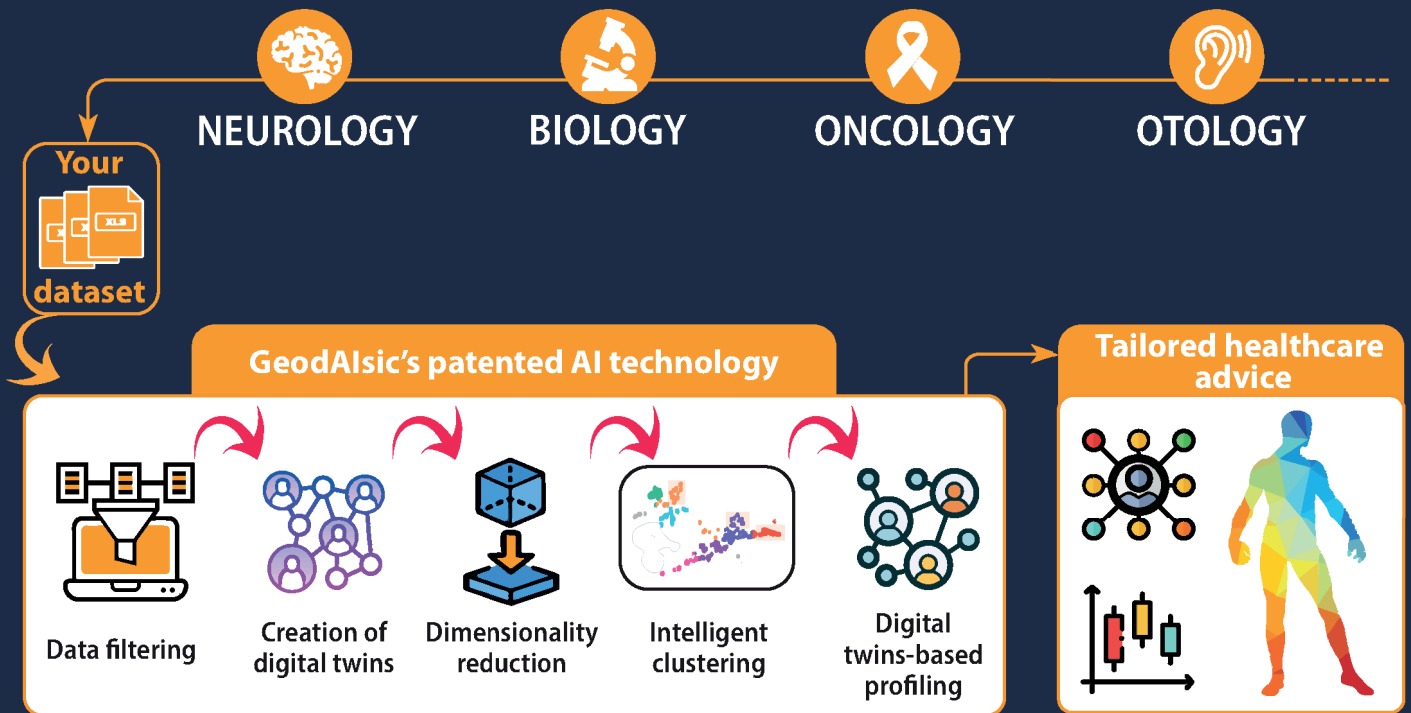




GeodAlSics

BrainGML[®]

BrainGML[®] is a unique, patented, generative AI based clinical Decision Support System able to detect and identify neurodegenerative diseases from routine MR images. It first creates a digital twin allowing to obtain personalized ranges for each brain structure, identifying precisely abnormalities using Generative Manifold Learning (GML) and displaying brain age. This information gives immediate and accurate information to doctors about possible disease.



Main advantages

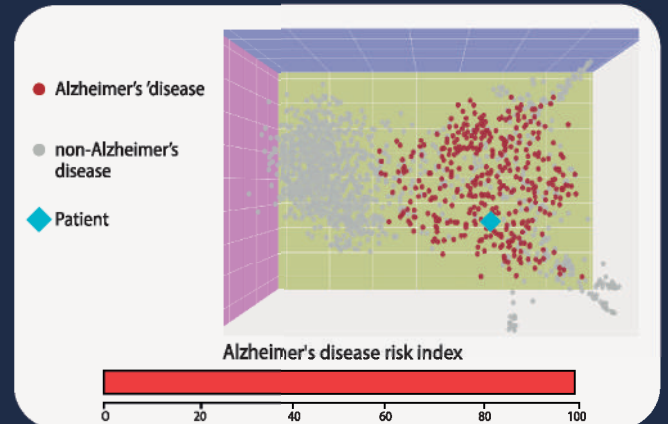
- Using routine imaging to obtain neurodegenerative diseases identification in a very short time
- Robust segmentation to get rid of MRI scanner's machine to machine effect and movements artifacts
- Cost control of the healthcare expenditures
- Better diagnostic using Digital twins to analyze brain structures combinations together versus structure to structure
- Explainable decision about pathology identification using proprietary atlas visualization
- AI grey zone gives result classified as atypical

APPLICATIONS

- Amyotrophic lateral sclerosis
- Alzheimer's disease
- Lewy's bodies dementia
- Frontotemporal lobe degeneration
- Parkinson dementia
- Vascular dementia



Critical radioanatomical structures for AI decision in a CE-marked Dicom viewer



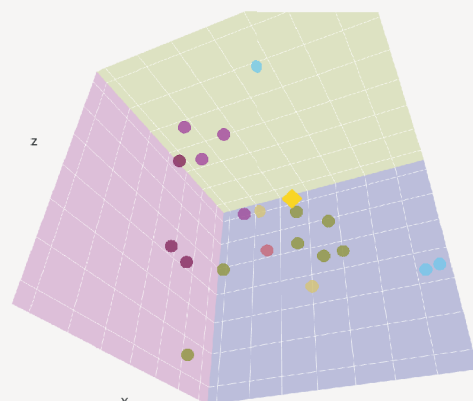
Fast risk assessment of biological Alzheimer's Disease based on MR 3D T1 weighted imaging

FEATURES

- MRI T1-weighted sequence inputs from both 1.5T and 3T scans
- Validated using CSF biomarkers analysis as gold standard
- Simple visualization and understanding of the disorders identification, giving explainability of the AI decision to the medical doctor.
- Provide volumetric data on diseased regions through brain parcellation and digital twin comparison, directly integrated in a CE-marked Dicom viewer
- Can be linked with PACS
- Provide results in 15 minutes
- Compatible to multiple vendors devices including SIEMENS, PHILIPS, GE, TOSHIBA
- Installed in Cloud or on Premise via federated learning

Personalized atlas for clinical decision support of non-Alzheimer's patients here in the case of TDP type frontotemporal dementia

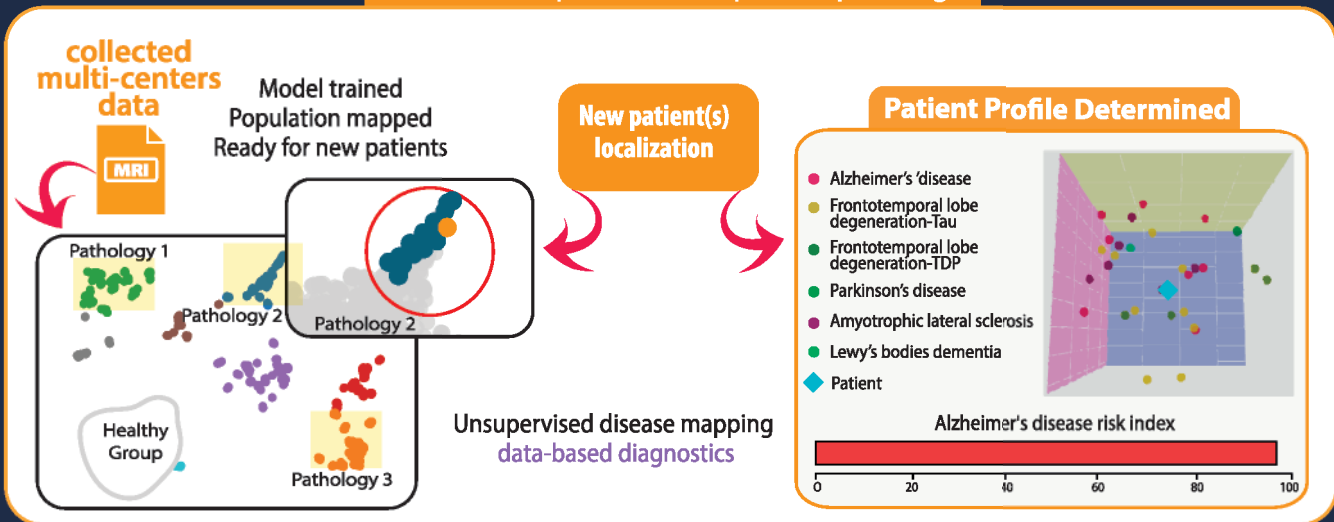
- Alzheimer's 'disease
- Frontotemporal lobe degeneration-Tau
- Frontotemporal lobe degeneration-TDP
- Parkinson's disease
- Amyotrophic lateral sclerosis
- Lewy's bodies dementia
- ◆ Patient



CLINICAL VALIDATIONS

- Initially trained using 7500 MRI T1 from several cohorts, latest clinical validation based on 350 participants, including 250 patients diagnosed with Alzheimer using the CSF biomarker (ATN classification) as the gold standard.
- The software demonstrated a sensitivity of 85%, and a specificity of 70%.
- The Positive Predictive value (PPV) obtained a score of 87% and the Negative Predictive Value (NPV) of 65%.

BrainGML®: personalized patient profiling



Benefits per user's type

For radiologists

Early detection of neurodegenerative disorders including those not detectable by experts, score per disease for differential diagnosis, patient evolution over time.

For Neurologist and Geriatrics doctors

Early roll-in Alzheimer's patients for CSF analysis, facilitate diagnosis for rare neurodegenerative and psychiatric diseases with easy explanation using GeoAlsics's Atlas.

For Healthcare system

Reduce clinical errancy and decrease total budget allocated to neurodegenerative patients by having early and specialist level even at primary centers, reduce expenditures by maintaining patients at home longer time.

For Pharmaceuticals companies

Detect potential patients eligible to their new treatment and follow-up their evolution overtime. Get marketing data (large scale) about their potential market size and type. Get exclusive access to biological information from routine MRI.

For patients

Obtain a real and scientific validated diagnosis based on simple imagery examination, no additional invasive exam, no over cost and save time for possible treatment. Delocalize specialist diagnosis to primary healthcare centers.

GeodAlsics versus State of the Art

	GeodAlsics BrainGML®	MRI-based brain volumetry	Amyloid or Tau PET scan	Blood test
Description	Diseases identification for Clinical Decision	Confirm regional and local brain atrophy	Brain Biomarker quantification & visualization	Blood Biomarker quantification
Threshold sensitivity for Alzheimer	85% sensitivity	70% sensitivity	80% sensitivity	90% sensitivity
Differential diagnosis for other neurodegenerative diseases	Medium specificity	Low specificity	Low specificity	under evaluation
Cost	Medium	Medium	High	Low to medium
Patients' access	Easy	Easy	Poor	Not available

“

“Better diagnosing and managing neurodegenerative and psychiatric diseases is one of the key public health challenges of this century. With new treatments emerging, accurately identifying patients with Alzheimer's disease is crucial for ensuring they benefit. To support this, BrainGML provides a comprehensive diagnostic assistance to radiologists, offering unmatched explainability of results by visualizing the patient's abnormal brain regions and showing the patient's position among those with similar conditions, helping guide treatment decisions.”

Prof. Alexandre Krainik, MD, PhD, Neuroradiologist

COMPANY

GeodAlsics develops medical software based on its own Artificial Intelligence technology. Our technology, called Generative Manifold Learning (GML), makes it possible to offer or develop customized software to help patients and caregivers. We analyse different types of data (morphological MRI, biological data, etc.) to detect various pathologies (neurodegenerative, oncology, psychiatry, etc.).

Towards personalized medicine, our AI technology takes into account the inter-individuality of patients. GeodAlsics is using secure Health Data Host to transfer and use patients data in the most up-to-date secure way. Our HDH is a French company certified RGPD and ISO 27001.



GeodAlsics

@ contact@geodaisics.com

+33 622 382 048

BIOPOLIS - 5 avenue du Grand Sablon, 38700, La Tronche, France

www.geodaisics.com

www.linkedin.com/company/geodaisics

