



# InnovITech at the forefront of scientific and technological research development

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# Get to know our Team



Established in 2011.



Located in Budapest (HQ) and two other major university cities (site offices).



Highly qualified, academic level professionals.



The current number of our experts is 100.

# General and Special Competencies



## Full Stack Project Development & Consultancy

Project management, software design, development and quality assurance.

(Agile&Scrum, UML, Java, .NET, Microservices, Angular, React, Android, iOS, Python, DWH, BI)

## Special Capabilities

Developing extremely high loaded systems  
Focusing on high quality software architecture  
Machine Learning, Bioinformatics, Big Data



## Research and Development

Cooperation with major research institutes and universities in the region.

# R&D Projects in Healthcare

Based on Machine learning, BigData, Bioinformatics



## CTA

- Cancer Treatment Assistant
- Increase treatment efficiency
- In cooperation with a major Hungarian medical university (Semmelweis)



## METAGENOM

- Automated analysis of correlation between mental illnesses and microbiome patterns
- Advanced taxonomy annotator system
- In cooperation with a regional science university (Debrecen)



## GENOMEATLAS

- 3D genome structure visualization
- Visual aid to simplify the genome structure analysis
- It supports early-diagnostics

# CTA

## CANCER TREATMENT ASSISTANT



Scheduled follow-up and tracking of medical results, therapies, control appointments and efficiency examination for patients suffering from oncological disorders



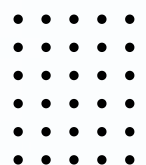
Optimized for oncological disorder therapy monitoring



Reduce additional treatment costs (active ingredient) when the patient response is insufficient.



Available on mobile devices (Android, iOS) and as a web application.



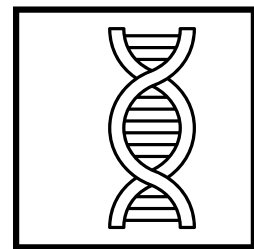
**HEALTHCARE**

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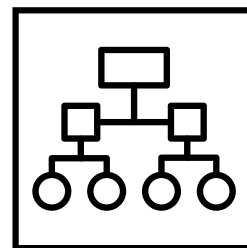
# METAGENOM



Automated analysis of mental illnesses (e.g. Major depressive disorder) and the constitution of microbiome pattern.



Records patients' clinical data, provides support for sample preparation and workflow sequencing.



Patient microbiome definition using advanced taxon annotator system, based on bioinformatics procedures.



Comprehensive microbiome + correlation analyses between clinical and next-generation sequencing data, using Machine Learning and statistical tools.

# GENOMEATLAS

NGS → FASTQ

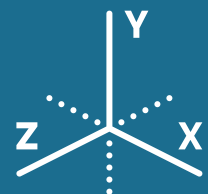


Normalized  
distance matrix

```
00101011
01101010
101110101
11011000
10100110
```



Coordinate file



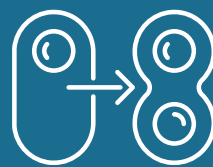
Three-dimensional structure visualization of cell type-specific genomes of a given species, using Machine Learning procedures.



Comprehensive, user-friendly bioinformatics analysis of raw sequencing data.



3D visualization, geometric transformations (zoom-in, zoom-out, rotation, selection of specific regions).



Reveals the cells' accommodation mechanisms within changed environmental circumstances.

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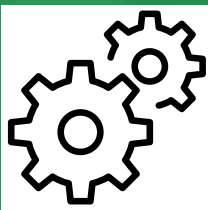


# FURTHER HEALTH DEVELOPMENTS

## EESZT GATEWAY



Integrated gateway service for private hospitals.



Direct communication with the EESZT (Electronic healthcare service platform) internal system.



Solution for the connection gap between different internal and external communication channels (REST, SOAP).



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# Technological Competencies

## SOFTWARE DEVELOPMENTS

Programming languages and extending technologies:

- **Backend:** Java - EE, Spring, JPA, JAX-RS, Swagger; .NET
- **Frontend:** Angular, React
- **Mobil applications:** Android, iOS, cross-platforms
- **Architecture and devops:** Microservices, WildFly Swarm, Docker, Docker compose, Docker build, Kubernetes, OpenShift
- **System integration:** Maven, Jenkins, Gitlab CI/CD
- **Databases:** Oracle, MySQL, PostgreSQL, MS SQL, MongoDB, Cloud SQL

## MACHINE LEARNING

- **Tasks:** Analysing relevant publications, large scale data handling and augmentation, building-configuration-learning-evaluation of neural nets
- **Technologies:** Python, PyTorch, Yolo, Tensorflow, numpy, Pandas, Jupyter-Lab

## DWH AND BIGDATA

- **DWH, BigData, BI:** MS Azure, MS SQL Server, Power BI, MS Integration Services, MS Analysis Services, Azure SQL Database, Azure Analysis Services, Cloudera Big Data
- **Cloud, MS Azure:** Synapse Analytics, Data Lake, Analysis Services, Power BI
- **On prem:** SQL Server, Power BI, Integration Services, Analysis Services, Oracle, SAP Hana, Clouder

## QUALITY INSURANCE

- **Source code analysis:** FindBugs, Checkstyle, PMD, Eclipse metrics plugin, „C&K” metrics, Sonar
- **Functional testing:** Testcase tracking by Redmine or Jira
- **Test automation:** Selenideum, TestNG, SoapUI, JMeter

## SOFTWARE DESIGN

- Business analysis
- Functional and technical modelling
- UML specific representation of model artifacts

## PROJECT LEADING

- Agile&Scrum
- Rational Unified Process



**Thank you for your  
interest in us!**

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