ICTürkiye2025
10 April, İstanbul

This project is co-financed by the European Union
and the Republic of Türkiye

UFUK
AVRUPA

Mehmet Baysan

ORGANIZATIONS: BaysanLab, Istanbul Technical University(ITU),
Health Institutes of Türkiye(TUSEB),
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REPUBLIC OF TÜRKİYE
MINISTRY OF INDUSTRY
AND TECHNOLOGY

#NATIONAL
TECHNOLOGY
INITIATIVE

COMPETITIVE
SECTORS
PROGRAMME

TÜBİTAK

Description of the Organisation

BaysanLab is established in Istanbul Technical University, Computer Engineering Department in 2020.

At BaysanLab, we apply informatics technologies on health data to improve the health services provided in Turkiye and worldwide.

We lead and execute the analysis of large omics data analysis for multiple projects in government organizations and private sector.

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My Teams' Expertise

Software | Open access | Published: 26 March 2024

COSAP: Comparative Sequencing Analysis Platform

Mehmet Arif Ergun, Omer Cinal, Berkant Bakışlı, Abdullah Asım Emül & Mehmet Baysan ✉

BMC Bioinformatics **25**, Article number: 130 (2024) | Cite this article

1667 Accesses | **3** Altmetric | Metrics

Research | Open access | Published: 22 March 2024

Improving somatic exome sequencing performance by biological replicates

Yunus Emre Cebeci, Rumeysa Aslihan Erturk, Mehmet Arif Ergun & Mehmet Baysan ✉

BMC Bioinformatics **25**, Article number: 124 (2024) | Cite this article

1149 Accesses | **1** Citations | Metrics

Software | Open access | Published: 03 September 2024

VCF observer: a user-friendly software tool for preliminary VCF file analysis and comparison

Abdullah Asım Emül, Mehmet Arif Ergün, Rumeysa Aslıhan Ertürk, Ömer Çinal & Mehmet Baysan ✉

BMC Bioinformatics **25**, Article number: 290 (2024) | Cite this article

1959 Accesses | **17** Altmetric | Metrics

Clinical Bioinformatics

AI and Data Mining

Platform-Tool Development

Data Science Oriented

Large research group

Combines: Engineers, Life Scientists and Clinicians

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Your Research Fields

Data Science for Health

Benchmarking of Genomic Data Creation and Analysis

Omics Data Integration for Precision Medicine

Development of Software Tools and Platforms for Smart Health Systems

Your On-going Projects

Variant Identification, Visualization and Benchmarking
Platforms:
    COSAP
    VCF Observer
    Saber: Sequencing Analysis Benchmarker

Improving Variant Calling Performance Through:
    Combining Replicates at FASTQ, BAM, VCF Levels
    Combining Alternative Algorithms

Variant Reproducibility Analyses:
    Reproducibility Assessment for Germline and Somatic
Sequencing

Variant Pathogenicity Prediction:
    Centralization of Benchmark Datasets
    Evaluation of Pathogenicity Prediction Algorithms
    Evaluation of ACMG Guideline Implementations

Analyzing Clinical Genome Data for Turkish Patients:
    Collection and Standardization of Clinical Data
    Comprehensive Genomic Data Analyses
    GWAS
    Monogenic and Polygenic Risk Scores

Turkiye Genome Projects Analyses for TUSEB

Project Idea

Call Topic: HORIZON-HLTH-2025-01-DISEASE-06: Implementation research addressing strategies to strengthen health systems for equitable high-quality care and health outcomes in the context of non-communicable diseases (GACD)

Deadline Dates: 18/09/2025

- ❑ **Objectives: Analyse vastly available genetic and clinical data to reveal genetic predispositions associated with human diseases**

- ❑ **Expected Results: Software tools that support clinical diagnosis based on monogenic and polygenic risk scores**

Project Idea

❑ **Genetic Data is important part of human life and provide vital information for many diseases.**

❑ **Next Generation Sequencing Technologies Allow:**
  ❑ **Comprehensive**
  ❑ **Inexpensive**
  ❑ **Rapid Generation of Genetic Data**

❑ **This leads to a massive increase in comprehensive genetic profile creation such as:**
  ❑ **Whole Exome Sequencing (WES)**
  ❑ **Whole Genome Sequencing (WGS)**

❑ **This data profiles can be combined with clinical data to extract:**
  ❑ **Genetic traits that are associated with disease development and through Genome-wide Association Studies (GWAS)**
  ❑ **GWAS results can be used to create decision support systems to aid disease diagnosis and treatment**

Consortium – required partners

No	Expertise	Type	Country	Role in the project
01	Governmental Institutions That Create Genetic Data		ANY	Providing the Clinical and Genetic Datasets
02	Private Clinics That Create Genetic Data		ANY	Providing the Clinical and Genetic Datasets
03				
04				

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