This project is co-financed by the European Union
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ICTürkiye2025
10 April, İstanbul

PRESENTER FULL NAME: Prof. Dr. Eralp DOĞU

ORGANIZATION:Muğla Sıtkı Koçman University

WORKSHOP NAME: Workshop #1 Dijital and Smart Health

E-MAIL: eralp.dogu@mu.edu.tr

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Description of the Organisation

Muğla Sıtkı Koçman University (MSKU) is a **public university** located in **Muğla, Turkey**. Established in **1992**, the university has grown into a comprehensive higher education institution offering **undergraduate, graduate, and doctoral programs** across various disciplines.

Internationalization: The university participates in **Erasmus+, Horizon Europe, and other international research projects**, enhancing global cooperation.

Academic Excellence: MSKU provides education in diverse fields, including **engineering, natural sciences, social sciences, humanities, health sciences, and fine arts**.

Research and Innovation: The university fosters scientific research and technological development, supporting both national and international collaborations.

Regional and Cultural Significance: Situated in **Muğla**, a region rich in historical and natural heritage, the university contributes to local and national socio-economic development.

MUĞLA
1992
SITKI KOÇMAN ÜNİVERSİTESİ

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Your Teams' Expertise

Machine Learning in Healthcare – Applying AI techniques for disease diagnosis and handling imbalanced medical datasets.
Biostatistics – Implementing statistical methods for biomedical research, focusing on experimental design and data analysis.
R Programming – Utilizing R for statistical modelling, data visualization, and reproducible research in various scientific domains.
Statistical Process Control – Developing methods for detecting shifts in processes using control charts and change point estimation.
Quality Control in Proteomics – Enhancing mass spectrometry data quality with statistical and machine learning approaches.

1. Northeastern University
2. University of Washington
3. Center for Genomic Regulation Barcelona
4. The HUPO-PSI Quality Control working group
5. Local medical schools
6. Pharma and Biotech Companies

1. R/Bioconductor Packages
2. Web Interfaces
3. Machine learning solutions for healthcare

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Your Research Fields

Machine Learning and Healthcare Analytics

Biostatistics and Statistical Methods for Biomolecular Research

Computational Statistics and R Programming

Statistical Process Monitoring and Quality Control

biodatalab

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On-going Projects

mzQC Format Specification Group

BIOETHICS

GREATLEAP

1. MSstatsQC-ML: Machine Learning Suite for to monitoring system suitability and quality control in mass spectrometry-based proteomics – Supported by TUBITAK. In collaboration with NEU and CRG Barcelona

2. Integration of quality metrics to enhance differential analysis in noisy large-scale Mass Spectrometry (MS)-based proteomics experiments – Supported by Genentech. In collaboration with NEU and Genentech

3. Designing an AI Language Model-Supported Biostatistics Course to Promote Statistical Literacy and Reduce Statistics Anxiety – Supported by TUBITAK. In collaboration with Medical School (Ege University)

4. Iconodiagnosis and Visual Thinking Strategies in Turkish Painting from the Tanzimat to the Republic: A Medical Faculty Perspective on Cultural Heritage– Supported by TUBITAK. In collaboration with Medical School (MSKU)

5. The Great Leap. Multidisciplinary Approaches To Health Inequalities, 1800-2022 (Greatleap)– Supported by the European Union. COST Action CA22116

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Project Idea

Call Topic: Quality Control in Proteomics using MSstatsQC
Destination: HORIZON-HLTH-2025-01-CARE-01: End user-driven application of Generative Artificial Intelligence models in healthcare (GenAI4EU)
Deadline Dates: NA

- **Objectives:** Improve reproducibility and reliability in large-scale proteomics experiments. Develop and enhance statistical quality control methods for mass spectrometry-based proteomics. Implement AI approaches to monitor and detect anomalies in proteomic data.
- **Expected Results:** A robust, user-friendly MSstatsQC tool with improved statistical monitoring capabilities. Enhanced detection of quality shifts in proteomics workflows. Broader adoption of MSstatsQC in academic and industry settings for quality assurance in mass spectrometry data.

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Consortium

No	Partner Name	Type	Country	Role in the Project
01	Northeastern University College of Computer Science	Private	USA	Method development
02	Potential partners include private labs in USA	Private	USA	Data generation

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Consortium – required partners

No	Expertise	Type	Country	Role in the project
01	Mass Spectrometry	NA	NA	Data generation
02	Computer Science	NA	NA	Method development

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PRESENTER CONTACT DETAILS:
eralp.dogu@mu.edu.tr
https://biodatalab.mu.edu.tr/tr
COUNTRY:Turkiye

biodatalab