Bilkent University
Computer Engineering Department
CS 491 Senior Design Project I

Assessment of Innovation Form

ID and Title of the Project: Pathogenius

Team Member IDs: 22202104, 22201914, 22202329, 22203758, 22203050

Name of the Supervisor: Can Alkan

Below questions need to be filled by the Innovation Expert

1) The project and subject that is proposed and presented to you is:

Criteria	Poor	Unsatisfactory	Satisfactory	Good	Outstanding
Technically feasible:	☐	☐	☐	☐	☑
You see enough market demand:	☐	☐	☐	☐	☑
Development planning is done well	☐	☐	☐	☑	☐
Enough research done for marketplace and competitors	☐	☐	☐	☑	☐
Delivers enough value or solves a real problem	☐	☐	☐	☐	☑

2) What is the nature of the innovation you see in this project? Do you have any suggestions to improve converting the knowledge and ideas of the subject into benefit and value?

The primary innovation of Pathogenius is not just a single algorithm but its holistic, system-level design focused on a critical use case. This project ties into our research projects and provides a platform for practical and commercial exploitation. The project aims to analyze large-scale genomic sequence data, which is typically done in HPC and cloud platforms, but we would like to be able to perform these analyses in resource-limited locations, such as those after natural disasters. Pathogenius also aims to design a system that could easily be used by people without a CS/CE background, such as doctors and emergency teams.

Bilkent University
Computer Engineering Department
CS 491 Senior Design Project I

3) Are there any unaddressed risks that team members need to consider during implementation?

The chosen accelerated algorithms might be faster but less sensitive. This could lead to a clinically disastrous false negative (missing a pathogen) or false positive (misidentifying one). The team must rigorously benchmark where their workflow's accuracy deviates from the gold standard methods.

4) Any suggestions while shaping go to market strategy?

It is best to talk to potential users for the platform, such as microbiologists and medical doctors, when designing Pathogenius. Find out what they would like to see in the generated reports, and even how they would like to see them. Also, collect all data on accuracy, sensitivity, specificity, and time-to-result compared to the standard.

Innovation Expert

Name: Can Alkan

Date: 23/10/2025

Signature: 

Final Expert Score: 5 (out of 5)

Scale:
(1) Poor, (2) Unsatisfactory, (3) Satisfactory, (4) Good, (5) Outstanding