

Ideation Phase

Brainstorming and Prioritization

Date: -	18th October, 2023
Team ID: -	Team-593068
Project Name: -	Genetic Classification of Individuals using Machine Learning
Maximum Marks: -	4 marks

Summary :-

It is critical to execute a thorough strategy in order to methodically analyze and evaluate genetic variants inside ClinVar, resolving instances of contradicting classifications. This entails combining different machine learning techniques to build a strong learning system capable of processing complicated and varied genetic data. The most important genetic components should be identified, informed estimations and fundamental decision-making should be combined, and gene alterations should be grouped according to how significant they are.


Collaboration amongst professionals is essential to properly handle contradictory interpretations. We can better comprehend the connection between genes and health and gauge the importance of various genetic factors by combining genetic scores with medical data. This strategy attempts to create a consistent and trustworthy genetic variation classification system, improving the accuracy of clinical decision-making and, ultimately improving patient care and advancing research

Reference :-

<https://app.mural.co/t/humangenomeproject8710/m/humangenomeproject8710/1697561135615/d235f7d3293000661c606f740f8d642cbb9f2550?sender=ud8b36b7ede0a72e96f054578>

Step 1 : Team Gathering, Collaboration and Selection of the problem statement


Template



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.


🕒 10 minutes to prepare
🕒 1 hour to collaborate
👥 2-8 people recommended



Before you collaborate


A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

🕒 10 minutes




Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.



Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.



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1


Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

🕒 5 minutes


PROBLEM


How might we effectively integrate machine learning algorithms to systematically analyze and validate genetic variants within ClinVar, particularly addressing instances where conflicting classifications arise due to the coexistence of two of the three categories (Likely Benign or Benign, VUS, and Likely Pathogenic or Pathogenic) for a single variant? This comprehensive approach aims to establish a reliable and standardized genetic variant classification system, ensuring accurate diagnoses and personalized treatment strategies for individuals with conflicting genetic variant interpretations, thereby enhancing the precision of clinical decision-making and advancing research in the field of genetic classification.





Key rules of brainstorming


To run an smooth and productive session


 Stay in topic.

 Encourage wild ideas.

 Defer judgment.

 Listen to others.

 Go for volume.

 If possible, be visual.

Step 2 : Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement

10 minutes

Person 1

Person 2

Person 3

Person 4

Tip

You can select a sticky note and hit the pencil (which is shared) icon to start drawing!

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

20 minutes

Tip

Also considerable tags to sticky notes to make it easier to find, browse, organize, and categorize related ideas as creating within your cluster.

Model Integration For Robust Learning

Identifying Key Genetic Factors

Managing Complex Data Interpretations

Step 3 : Idea Prioritization

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

TIP

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H** key on the keyboard.

