

UltraGene



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BE BOUNDLESS

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Background

<Problems>

It's hard to understand the meaning behind 23andME gene raw data.

# rsid	chromosome	position	genotype
rs12564807	1	734462	AA
rs3131972	1	752721	AG
rs148828841	1	760998	CC
rs12124819	1	776546	AG
rs115093905	1	787173	--
rs11240777	1	798959	AG
rs7538305	1	824398	--
rs4970383	1	838555	CC
rs4475691	1	846808	CC
rs7537756	1	854250	AA
rs13302982	1	861808	GG
rs55678698	1	864490	CC
i6019299	1	871267	CC
rs1110052	1	873558	TT
rs147226614	1	878697	GG
i6019302	1	881843	GG
rs2272756	1	882033	GG
rs67274836	1	884767	AG
i6019303	1	888554	CC
rs13302945	1	889159	CC
i6019304	1	889182	GG
i6019305	1	891343	GG
rs13303106	1	891945	GG
i6019306	1	894379	GG
rs13303010	1	894573	AA
i6019308	1	897792	CC
i6019309	1	898082	AA
rs6696281	1	903104	CC
i6019310	1	905681	CC
i6019311	1	906114	CC
i6019312	1	907666	--
i6060381	1	909238	GG
rs2340592	1	910935	GG
rs13303118	1	918384	GT
rs78164078	1	921071	GG
rs6665000	1	924898	AA
rs2341362	1	927309	CC

Background

<Solution>

We provide customer with a platform to conduct searches and comparisons to identify high-risk genes.

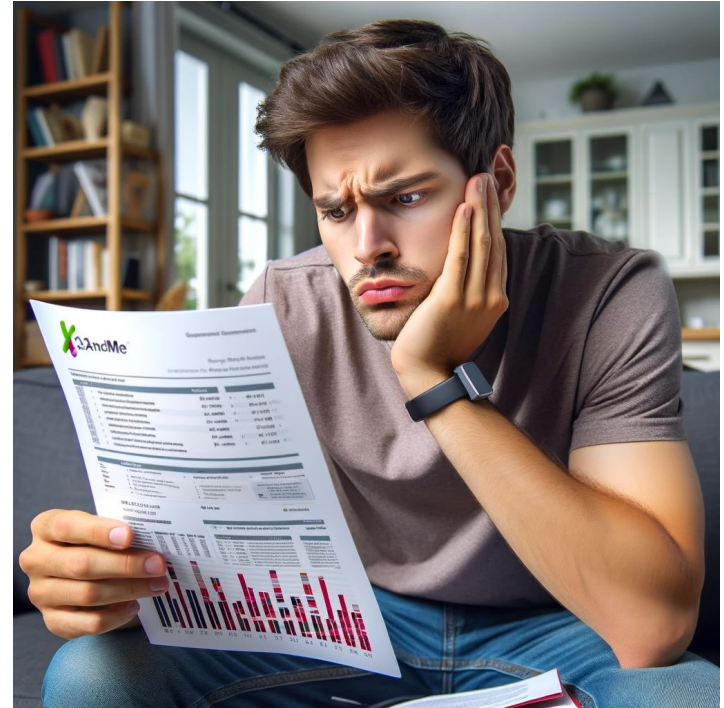
Matches with AI and experiment.

	position	Alt	Ref	Functional score
0	37,807,852	G	T	-0.46
1	37,807,852	G	T	-0.46

User Story

Michael got his genetic report from 23andMe and is eager to find out his personal genetic information and family genetic history.

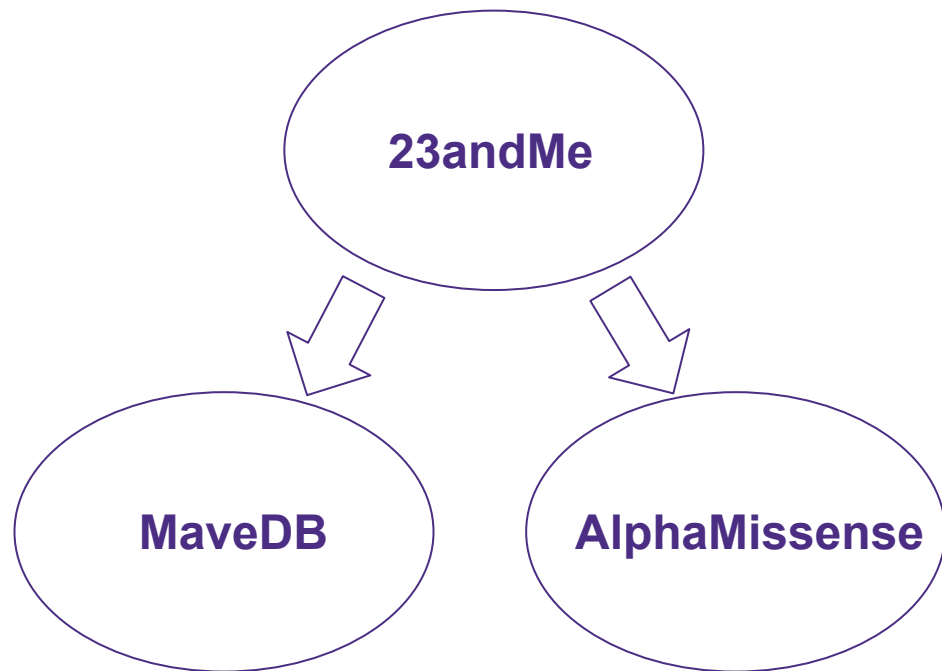
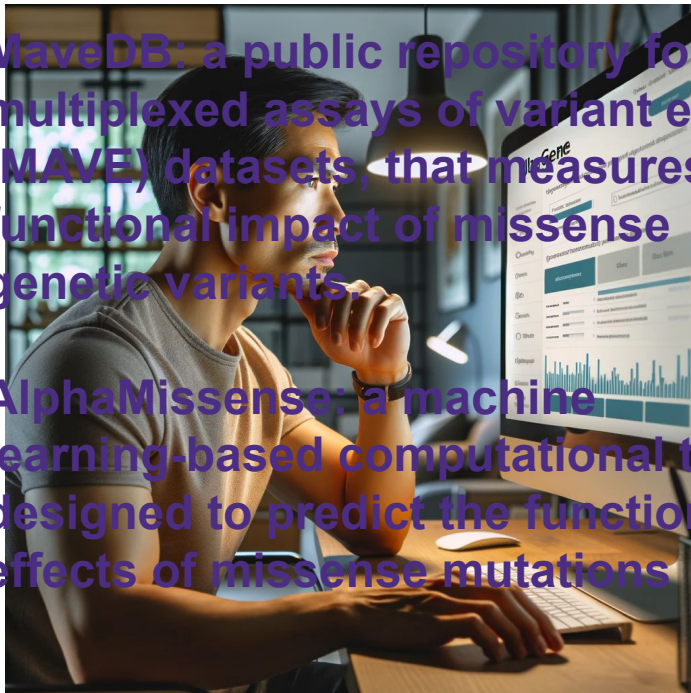
UltraGene can simplify the complexity of genetic analysis, uncover potential genetic anomalies in a user-friendly manner.



Intro to UltraGene

MaveDB: a public repository for multiplexed assays of variant effect (MAVE) datasets, that measures functional impact of missense genetic variants.

AlphaMissense: a machine learning-based computational tool designed to predict the functional effects of missense mutations





Results & highlight

Information obtained from UltraGene:

- gene position
- functional score
- FAQ with chat bot
- identifies and suggests the most dangerous DNA positions



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Future work

- **Incorporation of Additional Open Source Databases:**
 - **Integrate more Open Source databases to enrich the genetic data analysis capabilities.**
- **Support for Multiple Data Formats:**
 - **Expand the data input compatibility to accept various formats.**
 - **Move beyond exclusive support for 23andMe data.**