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AI Driven Drug and Vaccine Development

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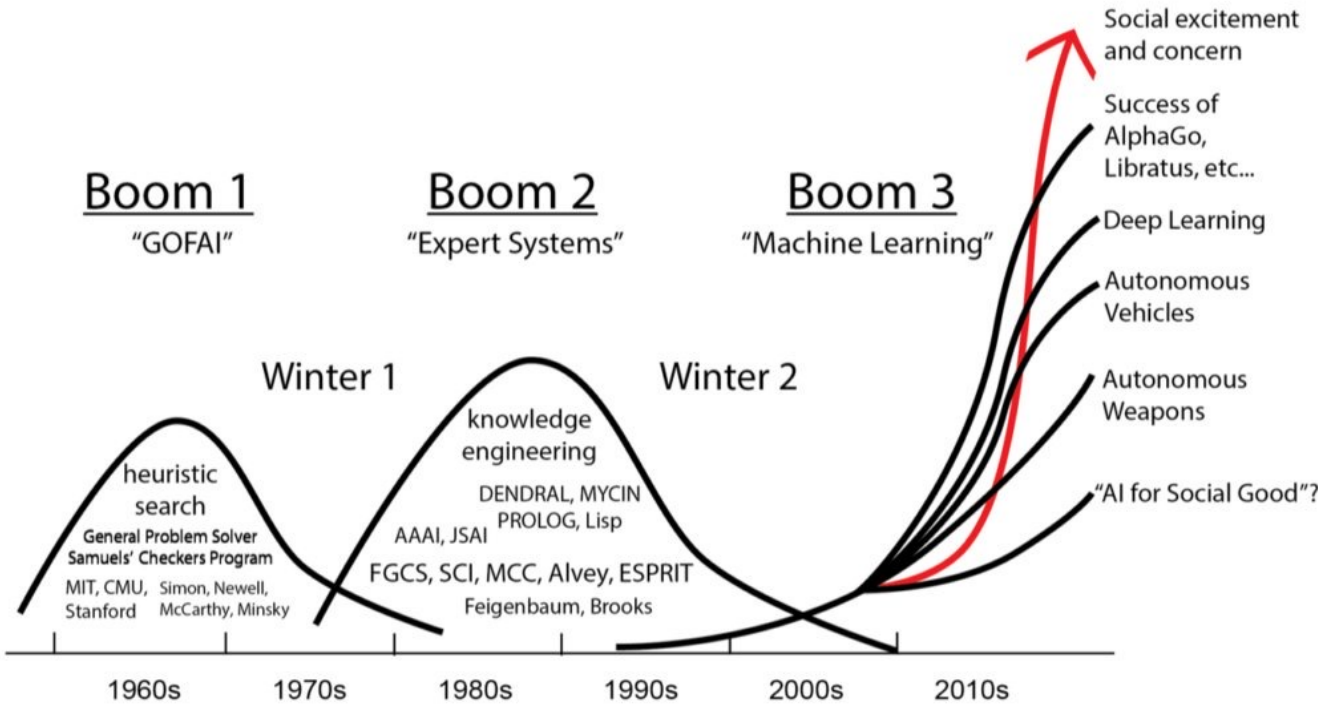
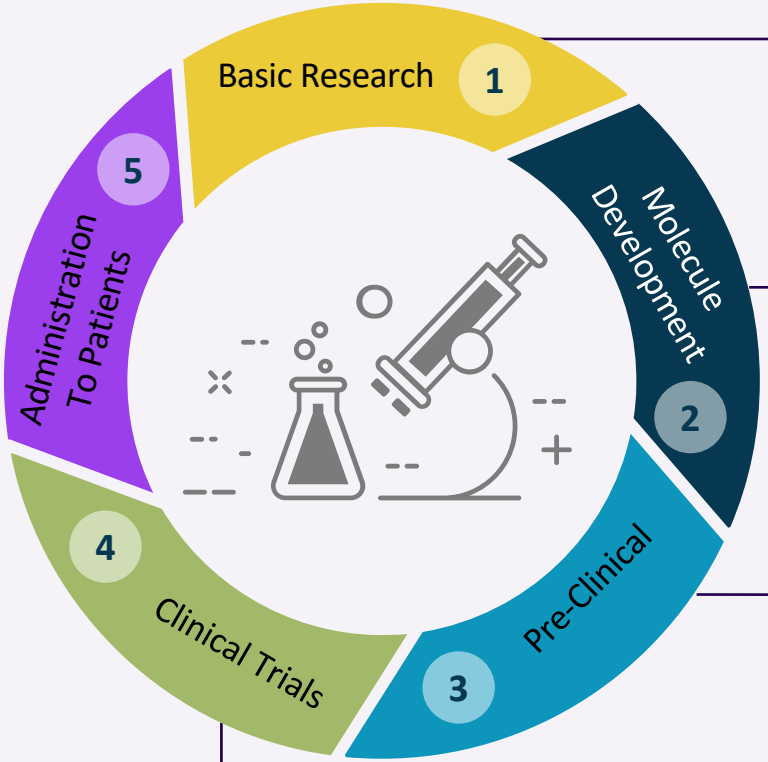
Artificial Intelligence is not a new thing, it is just evolving



Use Data & Artificial Intelligence to…



Understand Disease Mechanisms

Use new R&D technologies, to understand & identify new therapeutic targets

Look for new treatments

Identify new molecules & improve experiment efficiency

Molecular Data Modeling

Better understand molecule impact & treatment evolution

Analysis of Clinical Data

Improve clinical trials safety, efficiency & planning

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Unlock druggable patient biology with Precision Medicine

Enabling precise tailoring of pathway therapeutics to patient needs

PATIENTS
with complex diseases

Data & Analytics

BACK TRANSLATION

Right target

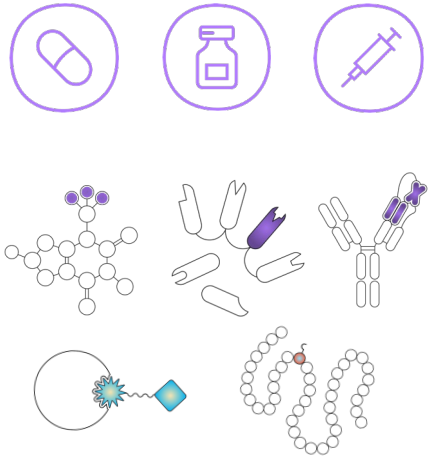
Right disease

Right drug

Right patient

FORWARD TRANSLATION

RESEARCH
Precision Therapies



Innovation Platforms

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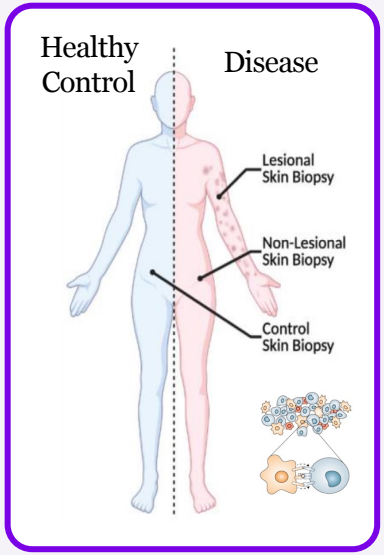
Usecase R&D

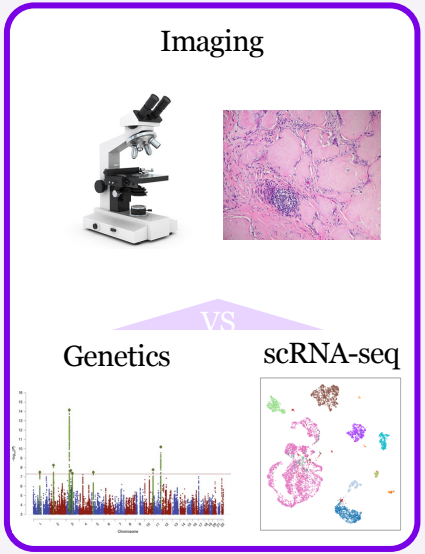
Spatial transcriptomics

Empowering Drug Discovery through Single-cell & Spatial Profiling

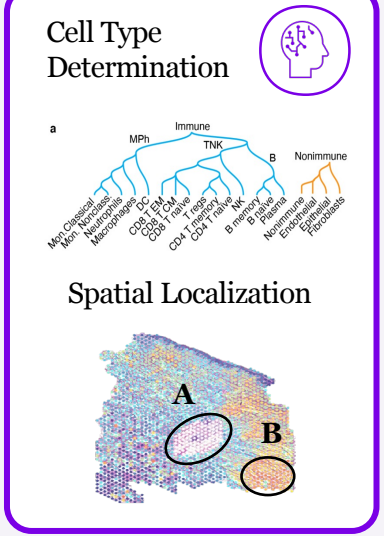
DISEASE SAMPLING



OMICS & IMAGING



AI & STATISTICAL ANALYSIS



DRUG DISCOVERY & DEVELOPMENT

- Target ID
- Disease Positioning
- Stratified medicine

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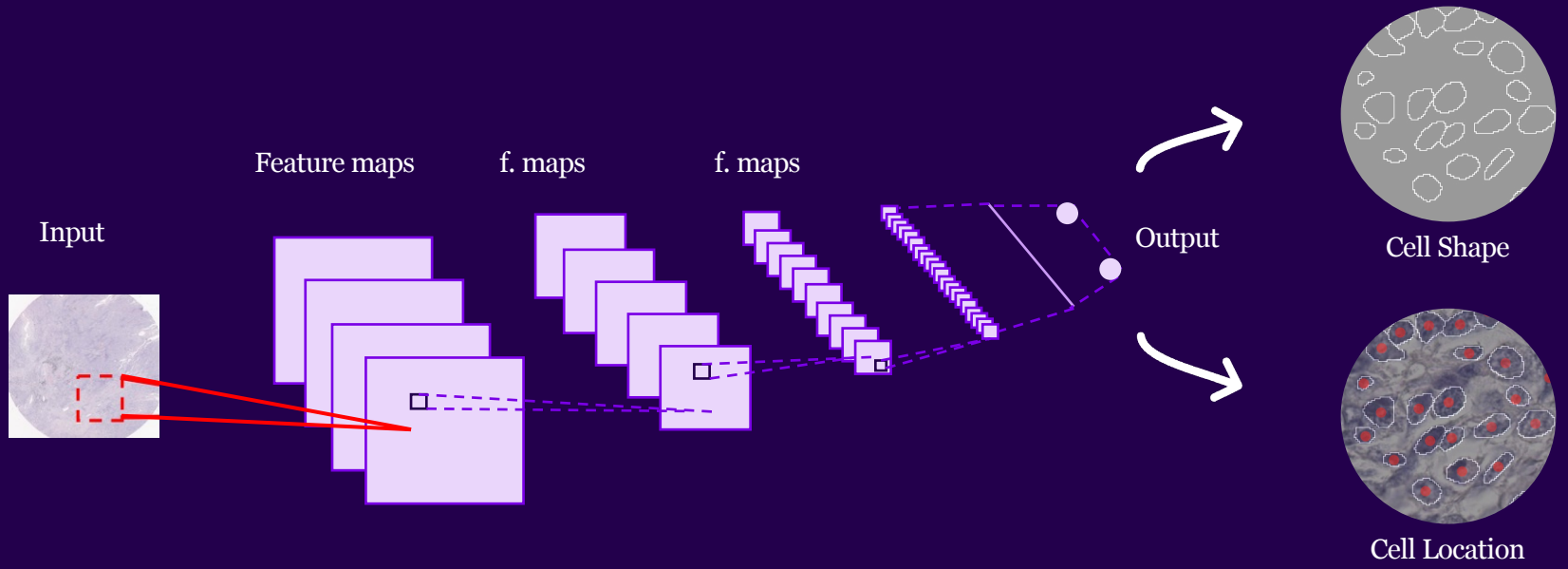
Deep Neural Networks analyze the tissue to identify cells



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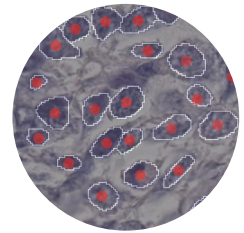
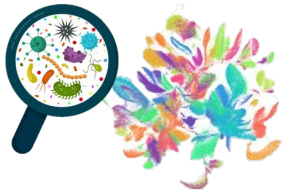
Artificial Intelligence combines Image, Genomics and Reference data

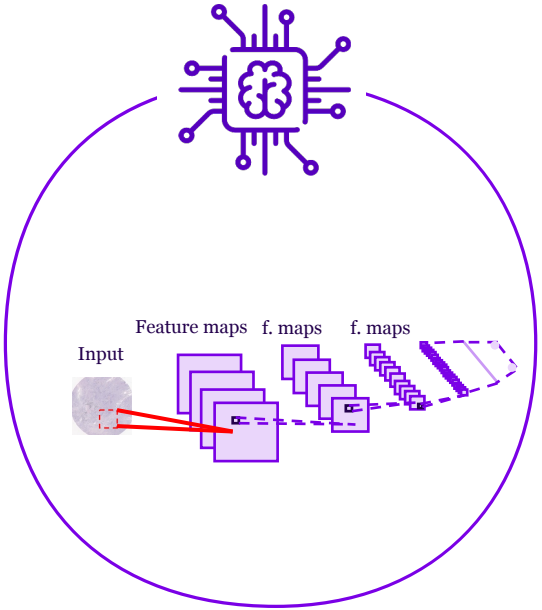


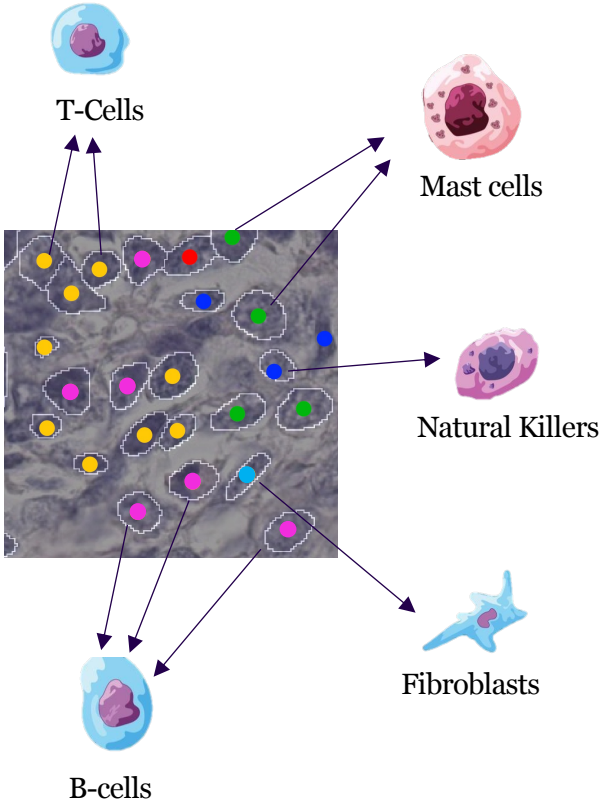
SPATIAL DATA

GENOMICS DATA



REFERENCE DATA





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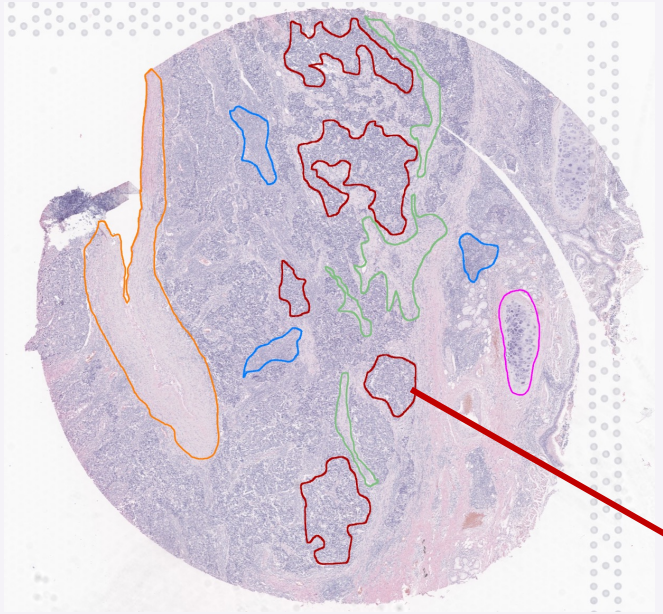
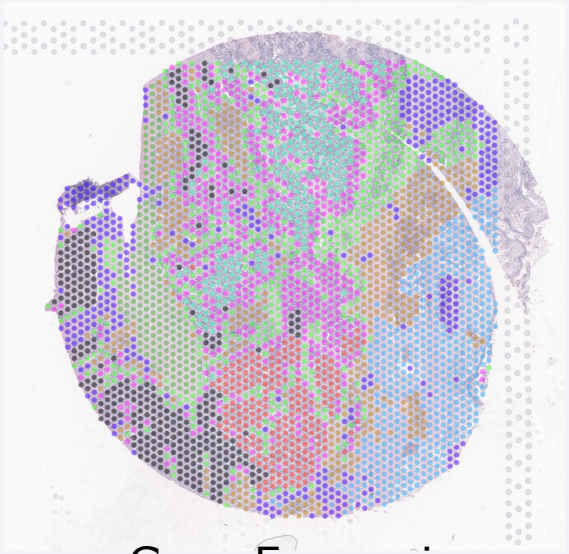
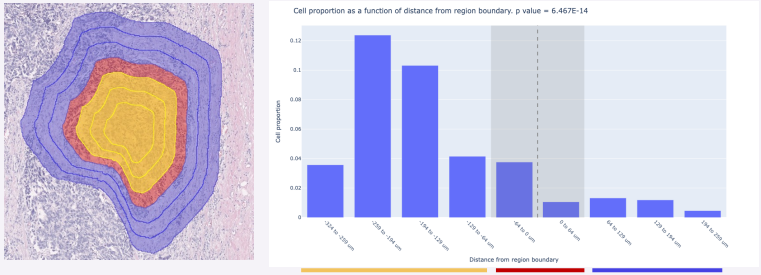
Non-Small Cell Lung Cancer



Areas of Interest
(e.g. Tumours)



Gene Expression



Quantitative Analysis

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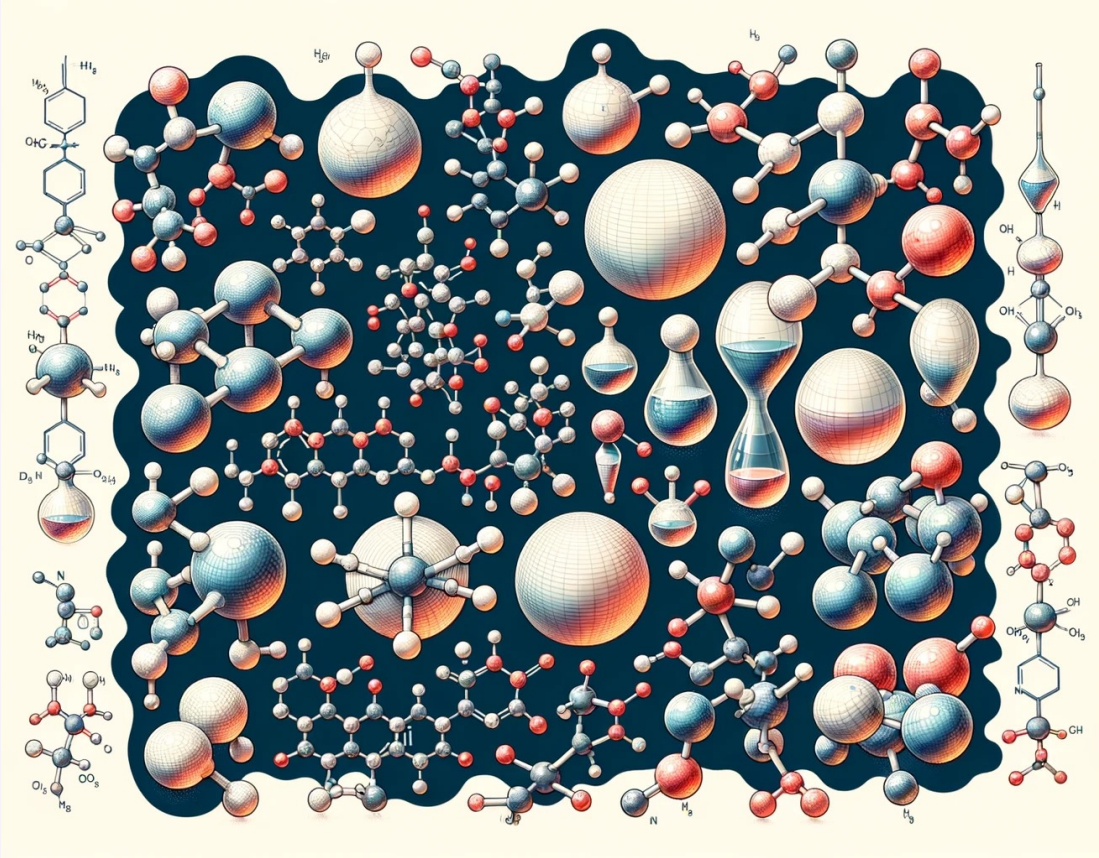
Usecase R&D

Molecule & mRNA stability prediction

We have vast amounts of public & prviate data about molecules, proteins, RNA...



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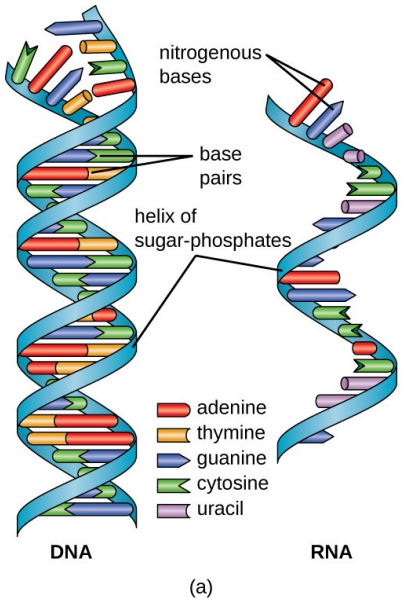
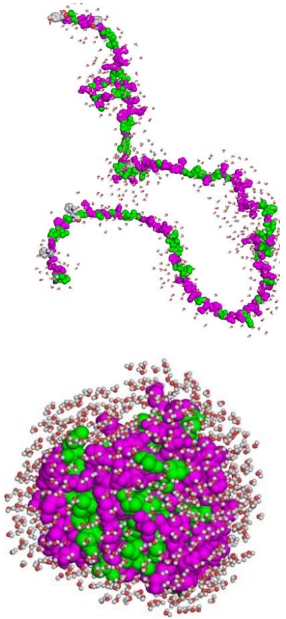
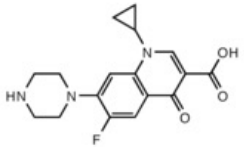
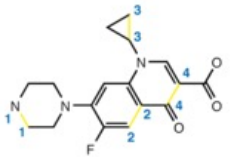
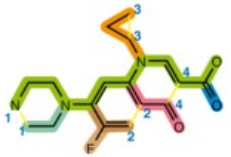
RNA, Proteins, Molecules… They all can be represented using text











Aminoacid Chains

SMILEs

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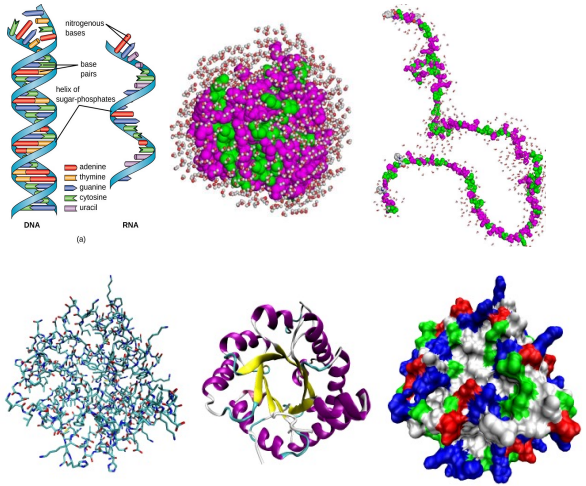
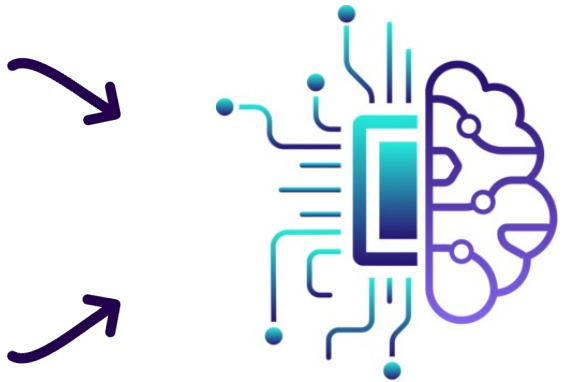
Text can be used to train Large Language Models
We can use them to analyze the data using other Machine Learning Techniques





Large Language Models
(similar to Chat GPT)

Stability Properties

Binding Sites

Toxicity Estimation

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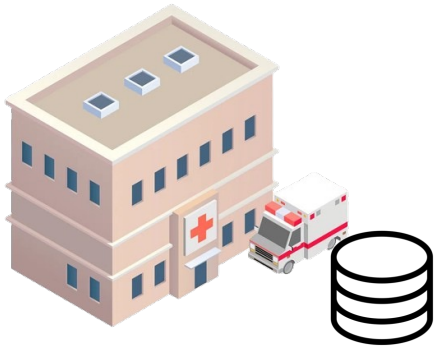
Usecase R&D

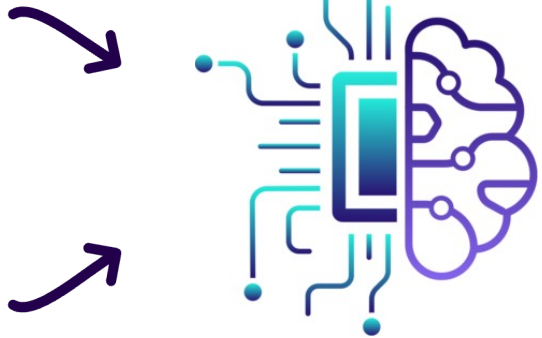
Clinical Trial Safety Optimzation

Not all drugs will work the same for all kind of patients…



EHR Data

Drug Development &
Experimental Data



Biomarkers

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The right drug for the right patient. the right patient for the right trial.

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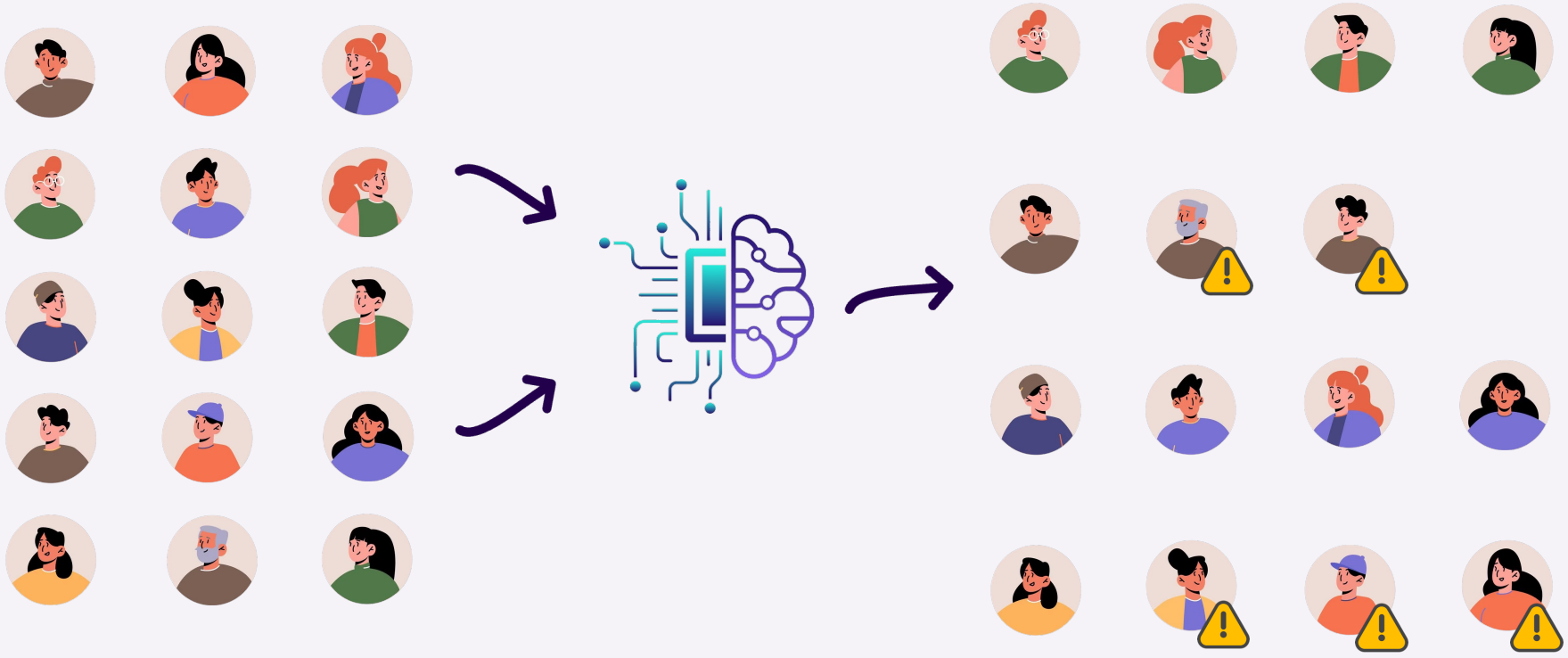
Stratify Patients and Refine Inclusion/Exclusion Criteria



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