GENE.AI IDEATHON

MEDIMENTS

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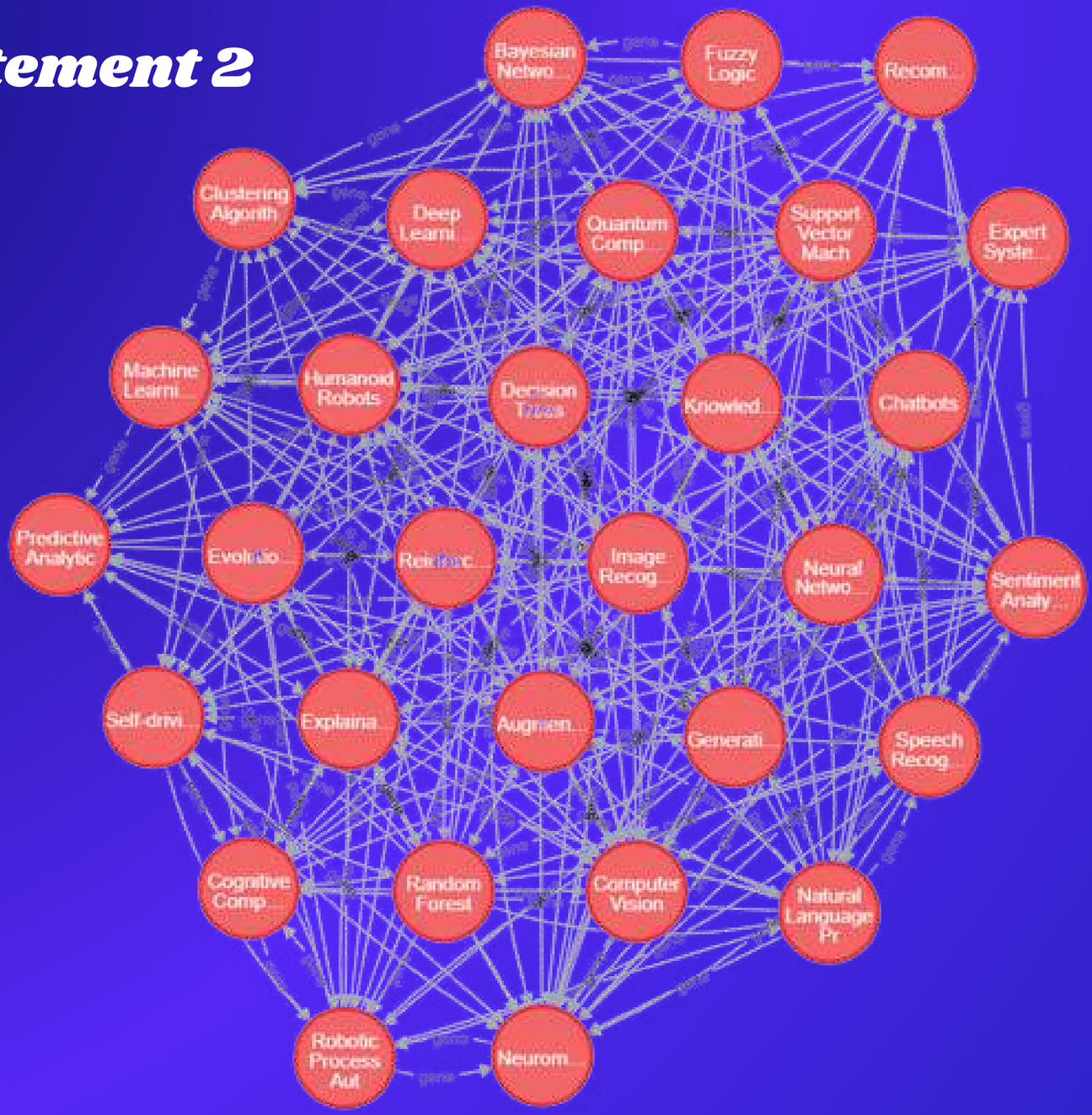
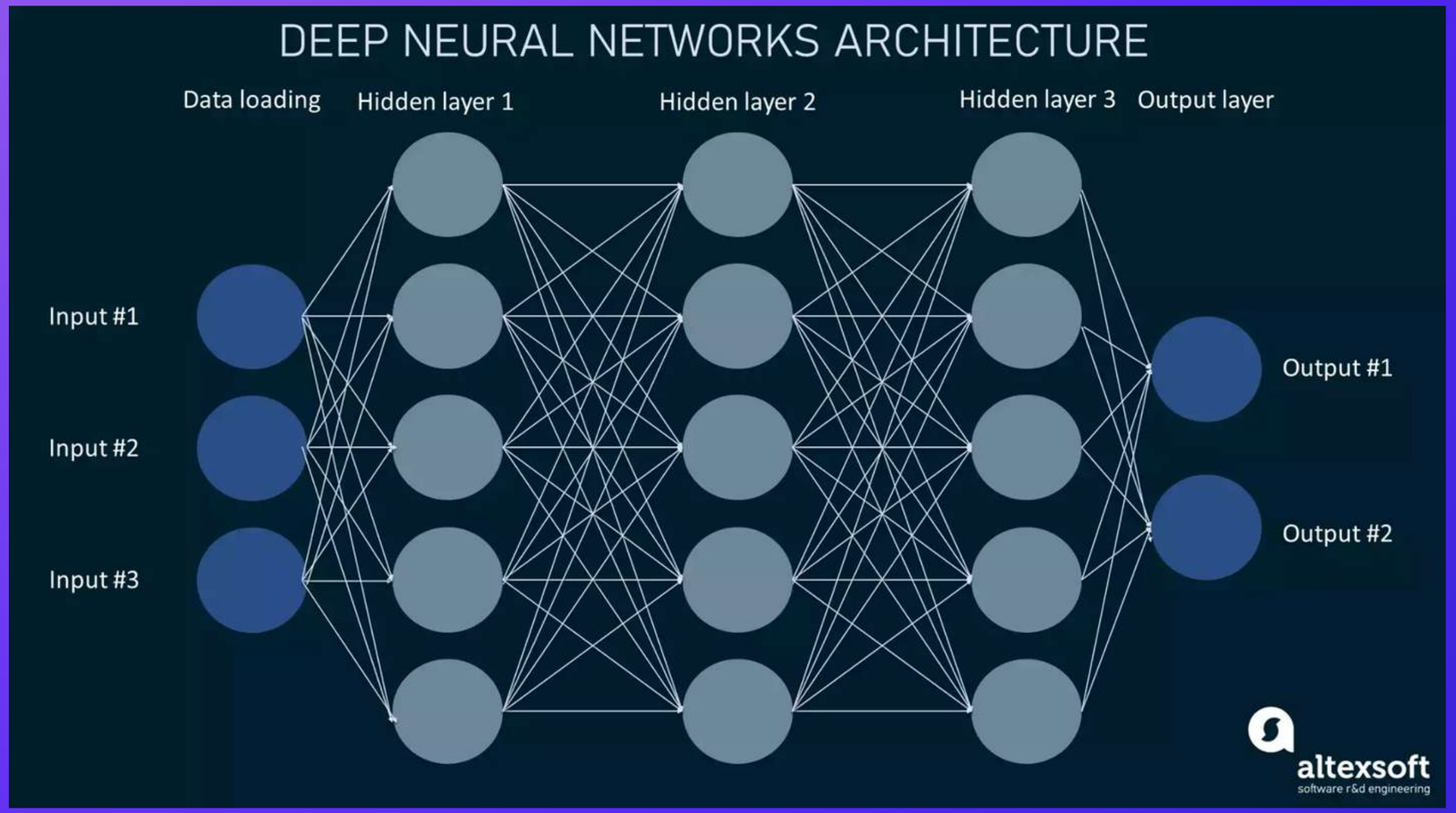
Problem statement 2

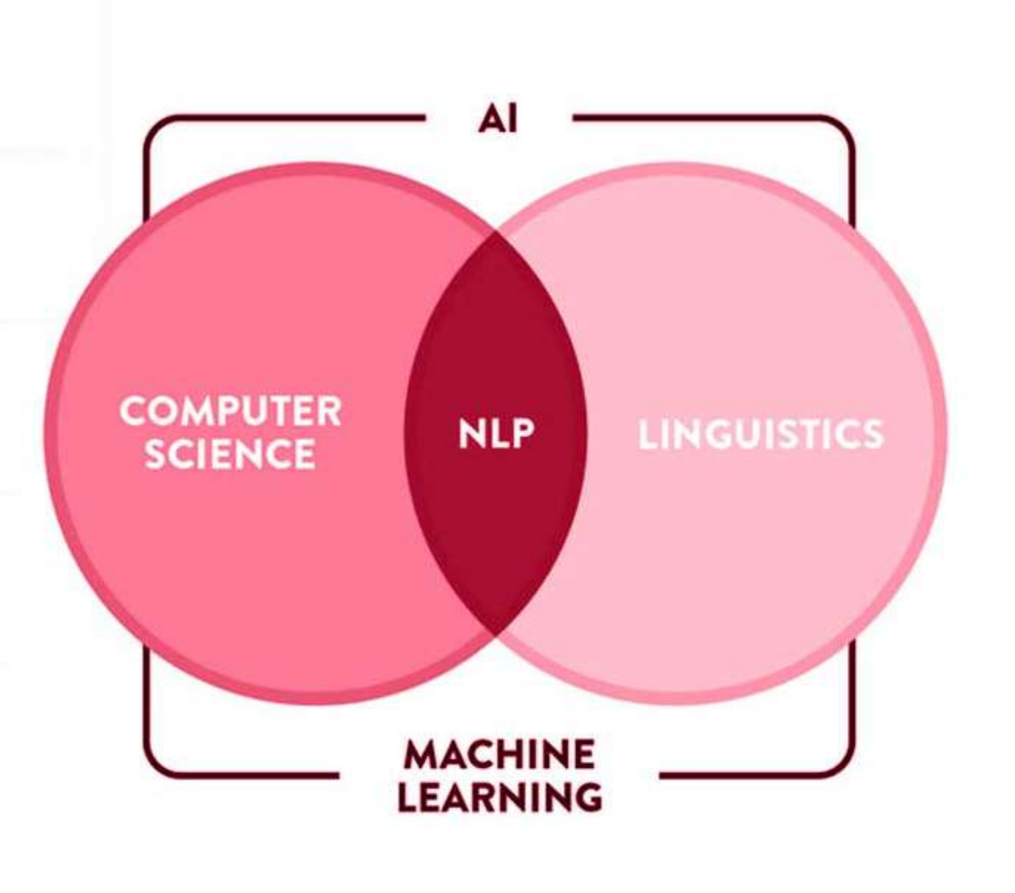


DEEP LEARNING



It is a method in Artificial Intelligence (AI) that teaches computers to process data in a way that is inspired by the human brain

NATURAL LANGUAGE PROCESSING (NLP)



It is the ability of a computer program

to understand human language as it is

spoken and written

VALENCE

12 million

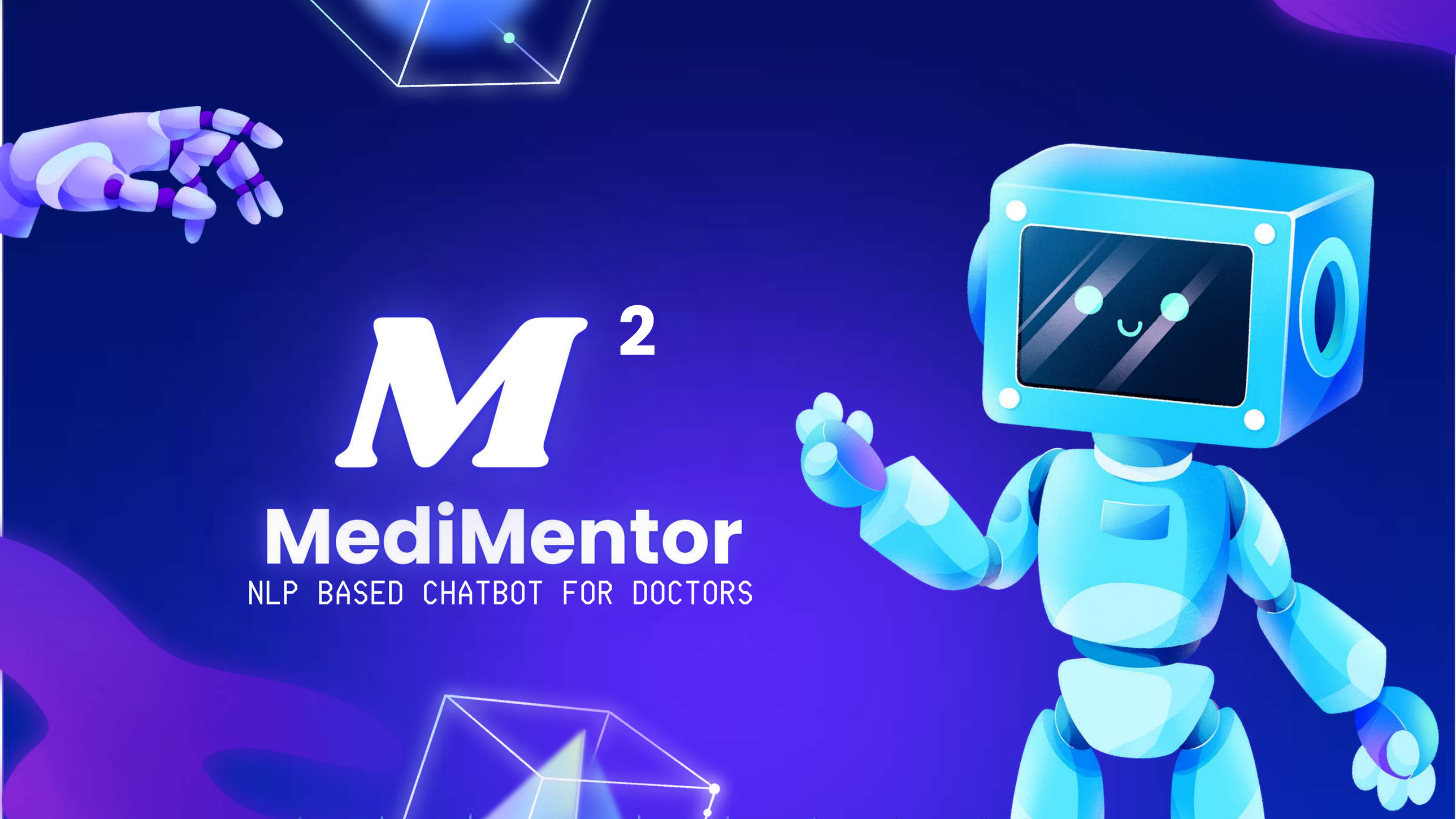
adults are misdiagnosed every year

10-20% are patients with **serious conditions**

44% of some **types of cancer** are misdiagnosed

51% of breast imaging second opinions result in a **big change of interpretation**

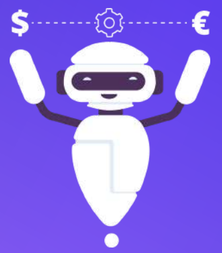
docpanel


M2
MediMentor
NLP BASED CHATBOT FOR DOCTORS

ISSUES IN EXISTING CHATBOTS

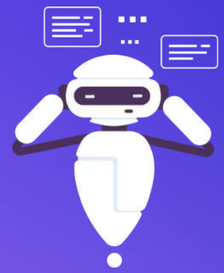
ISSUE 01

Data quality and quantity



ISSUE 02

Accuracy



ISSUE 03

Data privacy and security

FUNCTIONALITIES

01

Differential disease diagnosis

02

Analysis of medical images and electronic health records

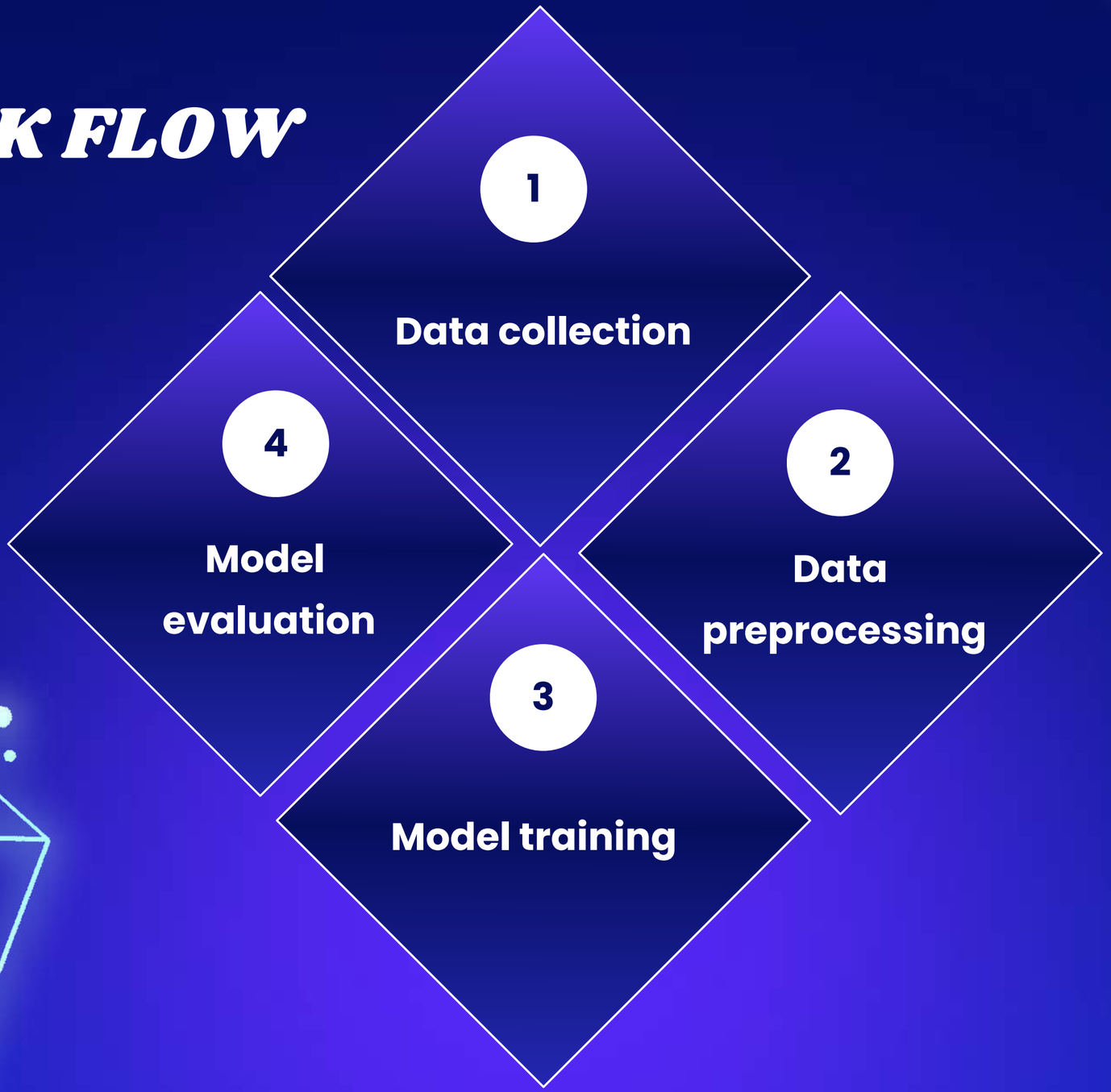
03

Precision medicine

04

Latest advancements and technologies in the field of medicine

WORK FLOW


1
Data collection
2
Data preprocessing
3
Model training
4
Model evaluation

1 Data collection

Structured and Unstructured data

- **Medical records of patients (EHR)**
- **Medical research papers**
- **Medical textbooks and guidelines**
- **Publicly available online resouces**

2

Data preprocessing techniques

- Case normalization
- Tokenization
- Stop word removal
- Intent classification

2

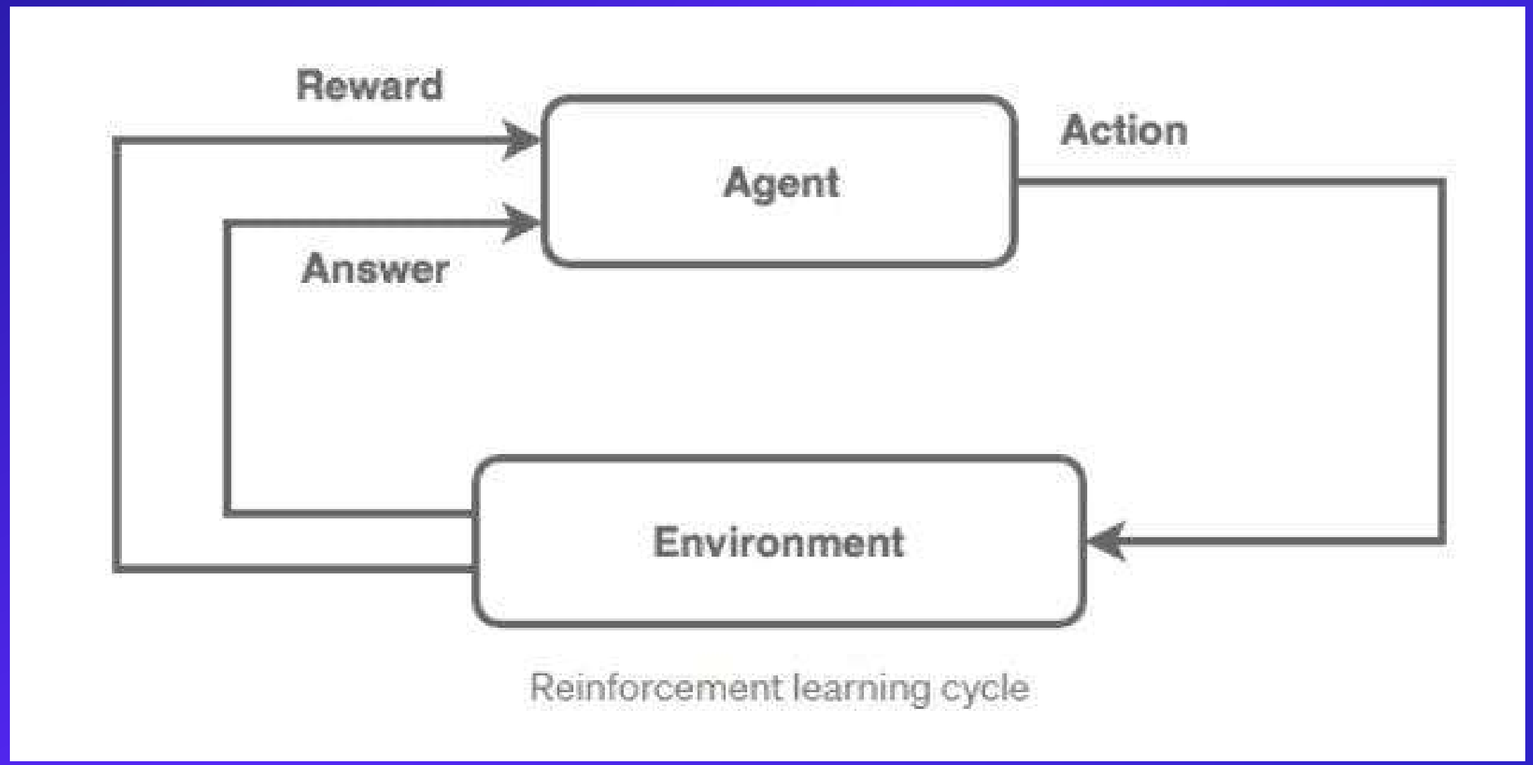
Data preprocessing techniques

- Medical terminology normalization
- Medical abbreviation expansion
- Medical entity recognition
- Medical intent classification

3 Model training

Reinforcement learning

It is a machine learning training method based on rewarding desired behaviors and punishing undesired ones



Reinforcement learning cycle

4 MODEL EVALUATION

Performance metrics

- Goal completion rate
- Task success rate
- User satisfaction
- Average conversation length
- Fall back rate

ADDITIONAL FEATURES

- Multilingual support
- Speech - to - text
- Specific prompts for specific use case
- Dedicated section for providing precise recommendations for life threatening diseases like cancer, HIV, and autoimmune diseases

CONCLUSION

With this NLP chatbot we aim to provide better healthcare to every ordinary citizen by helping the doctor understand the issue better!

THANK YOU!