



## BUSINESS CHALLENGE

The project aimed to identify existing therapeutic candidates with well-established risk and toxicity profiles that could be repurposed as treatments for COVID-19. By leveraging machine learning and computational transcriptomics, our research lab analyzed gene expression signatures of both COVID-19 and various drugs using publicly available gene expression datasets. This approach enabled a more efficient identification of promising therapeutic candidates. Unlike traditional drug development, which often requires extensive testing and long timelines, this method accelerated the repurposing process, providing a faster response to the rapidly evolving COVID-19 pandemic.

## COGNITIVE SOLUTION

The cognitive application utilized Loop Cognitive Platforms to analyze the full content of historical medical records, providing diagnostic support to doctors of all seniority levels.

### Dark data used for training:

Public gene expression data for disease-drug pairs and genomic transcription data for known SARS-CoV-2 strains.

### Dark data used for inference:

Gene expression profiles of therapeutic intervention candidates.

Industry: Healthcare

## INTERNAL RESEARCH LAB PROJECT

## RESULTS

**5000** DRUG GENE EXPRESSION ANALYZED against SARS-CoV-2 viral RNA sequence

**102** DRUGS POTENTIALLY REPOSITIONABLE for therapeutic intervention against SARS-CoV-2

**3** DRUGS REPOSITIONABLE

The first drug is a psychiatric medication initially developed to treat psychotic disorders, including schizophrenia and acute psychosis. The second drug is an orally administered antimycobacterial agent originally designed for the treatment of leprosy. The third drug is an orally administered prodrug of ampicillin, commonly prescribed for bacterial infections.