Machine Learning in Healthcare -Code Drux

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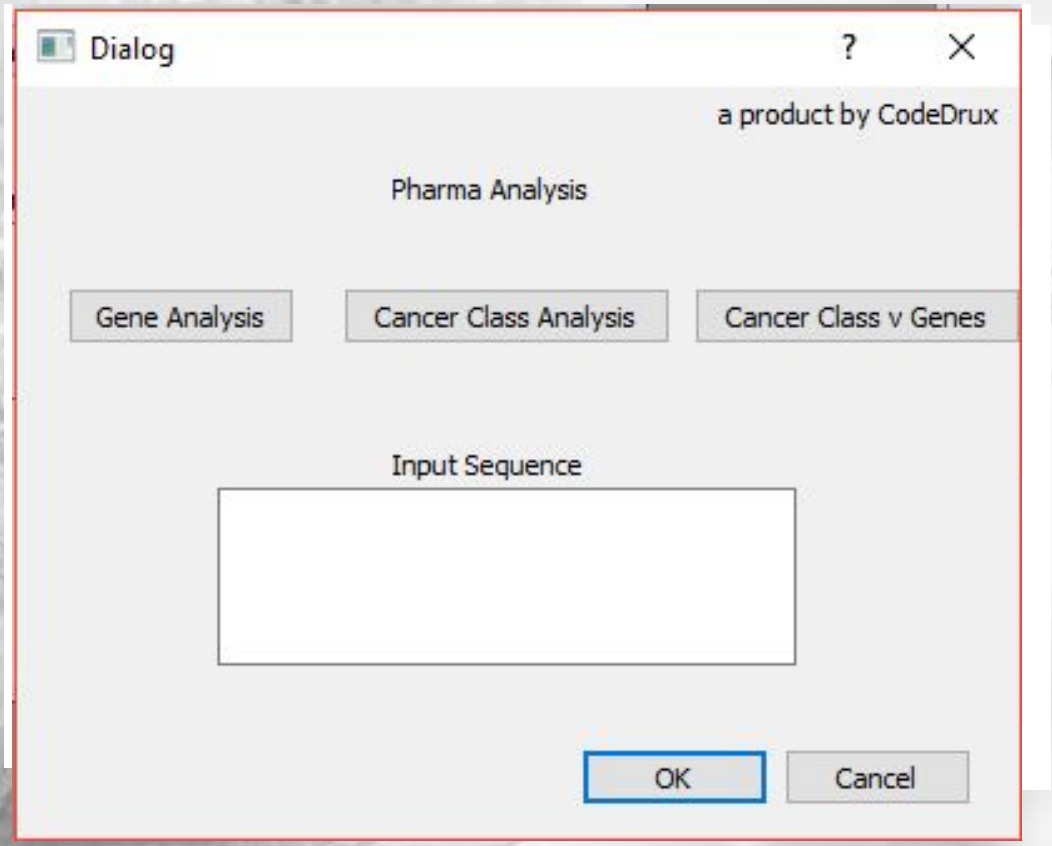
Introduction/Vision/Data

Problem	Resource	Solution
Progress has been slow due to significant amount of manual work still required to understand genomics	**Thousand annotations of which genes are clinically actionable and which are based on clinical literature**	• **Analyzes Data for pharmaceutical point of view and search for patterns** • **Deep Learning Model that generalized over genome sequence and can predict unseen mutation** • **Analyze Expert Studies to figure out the class of Genetic Mutation**

Approach



Extracting database

Pre Process Gene from NCBI Genbank.Analyze the data for pharmaceutical point of view. Permutate with the variation. One Hot Encode

Deep Learning Model

Deep Learning Model that gains insight from the pattern of mutation and predict Class of genetic variation

Text Analysis by Expert

Analyzed text extract from experts to understand expert point of view

Genome Mutation Text Analysis

- Genome Mutation Literature provided by MIT Sloan Cancer Cell Experts
- Natural Language Processing on text data set
  - Text was converted to Doc2vec
  - Doc2vec was then trained through a Deep Neural Networks
- Usefulness
  - Pharmaceutical Research
  - Medicine Research

Future Scope

- Combining both Genes and Genome text analysis
- Predicting Drug Resistance of Cancer Virus
- Predicting Cancer by Analyzing Gene