INTELLEGENS

DEEP LEARNING TECHNOLOGY

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APPLYING NOVEL A.I. TO ANALYSE SPARSE, HIGH VALUE, DATA SYSTEMS

Using a new deep learning technology, developed by members of our founding team at the University of Cambridge, we analyse big, fragmented datasets, with a small number of well characterised records; typically created empirically at significant expense. Our new algorithm can extract an unprecedented amount of information, from datasets which are as little as 0.01% complete, inferring high value information that would be prohibitively expensive to obtain by observational, empirical or experimental techniques.

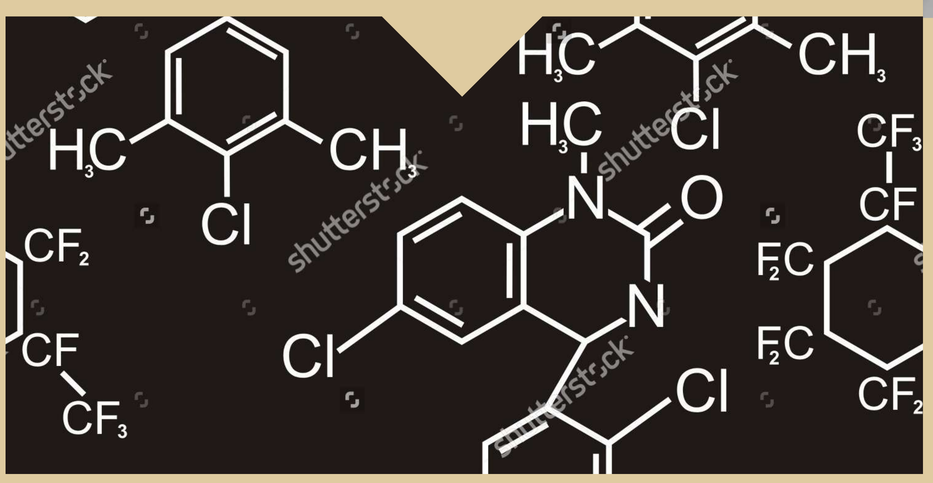
WORKING WITH A MATRIX OF

12,000,000,000

POSSIBLE COMPOUND-PROTEIN INTERACTIONS WITH

1,200,000

KNOWN VALUES



WE WERE ABLE TO PREDICT

240,000,000

VALUES

GIVING **200x** THE POTENTIAL TO DISCOVER PROTEIN ACTIVITY ON TARGETS.

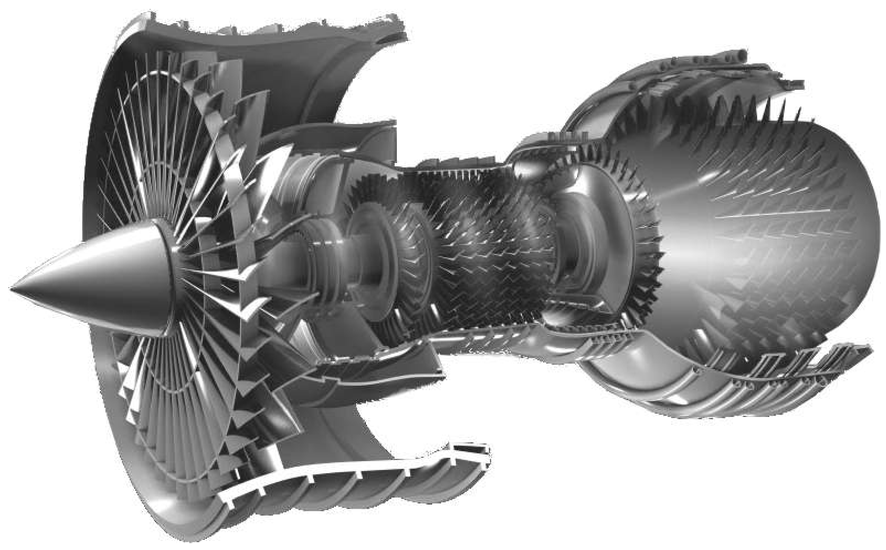
Drug Discovery

Creation of a neural network to ran over a protein activity data set of 6,000 proteins AND 2,000,000 compounds, 99.5% of the values for protein activity were missing. We completed 20% of the matrix. A typical pair-correlation Bayes approach was only able to fill 0.5% of additional data. we performed a 4-fold cross-validation test. The data set was split in four, and then each quarter is withheld for validation.

MERGING OF EXPERIMENTAL AND SIMULATION DATA INTO A HOLISTIC DESIGN TOOL RESULTING IN DISCOVERY OF

4 NEW ALLOYS

WHICH HAVE SINCE BEEN EXPERIMENTALLY VERIFIED AND PATENTED



Materials Design

We used our technology on a database containing 10,000 materials based on experimental data. Exploring a 30 dimensional composition and heat treatment space, our software tool proposed four new alloys.

INTELLEGENS IS A SPIN-OUT OF THE UNIVERSITY OF CAMBRIDGE WITH THE SUPPORT OF LOCAL BUSINESS ANGELS. INTELLEGENS IS DEVELOPING ITS PROPRIETARY TECHNOLOGY INTO A GENERIC TOOLSET THAT CAN BE APPLIED TO SPARSE, HIGH VALUE, BIG DATA PROBLEMS ON A COMMERCIAL CONSULTANCY BASIS.

bp SAMSUNG UNIVERSITY OF CAMBRIDGE GRANTA MATERIAL INSPIRATION ROLLS ROYCE