SEDGE

PLUGGING THE GAP
IN BIG DATA ANALYTICS

Generating the outcomes that matter

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SVMPHARMA

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SEDGE: PLUGGING THE GAP IN BIG DATA ANALYTICS

Many companies are adopting big data analytics as part of their business intelligence strategy, however there currently exists a gap in large dataset analytics and the availability of such tools in pharma.

SEDGE (Exploration of Data for knowledGE) has been designed to make large data analytics easy, so if fast computation is required, SEDGE can provide solutions to your data handling needs.

THE DATA GAP

The challenges of working with large datasets are numerous and can be as large as the data themselves. The **volume of data** alone necessitates large servers, large memory, and large CPU capabilities in order to process the data. In addition **disparate data types** make multivariate analysis a must: genomics data for example can be linked with other data sets (such as gene expression, disease characteristics and phenotype) requiring integrated analysis of **nonlinear data**. The increasingly common linking of these differing datasets makes arising nonlinear relationships extremely hard to calculate and analyse. Data mining can be **laborious** and costly; designed to make full use of smart artificial intelligence, SEDGE makes a complex process simple.

SEDGE IS AN INTELLIGENT BUSINESS SOLUTION TO YOUR LARGE SCALE DATASETS

Developed in partnership with the Faculty of Mathematics & Engineering of Maribor University, Slovenia and SVMPharma, SEDGE is a bespoke tool capable of analysing large datasets.
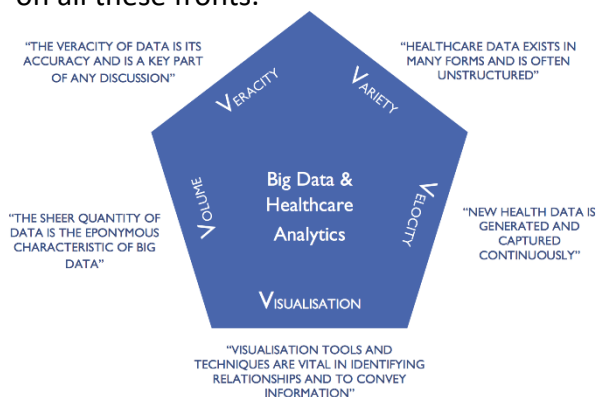
As a data exploration and visualisation tool as well as analysing data and performing predictive analytics, SEDGE is focussed on providing rapid 'smart analysis' with fast computation of large datasets.

> **SEDGE takes the next step in machine learning**
> Providing predictive analytics of highly complex data sets, SEDGE analysis finds correlations between multivariate fields and develops easy to use visual outputs for the end user

THE FIVE V's of Big Data analytics

Big data has been defined as high volume, high velocity and high variety information. In addition users rely on high veracity of analysis, and are increasingly now looking for visualisation of their data. SEDGE delivers on all these fronts.

"THE VERACITY OF DATA IS ITS ACCURACY AND IS A KEY PART OF ANY DISCUSSION"

"HEALTHCARE DATA EXISTS IN MANY FORMS AND IS OFTEN UNSTRUCTURED"

Big Data & Healthcare Analytics — VERACITY, VARIETY, VOLUME, VELOCITY, VISUALISATION

"THE SHEER QUANTITY OF DATA IS THE EPONYMOUS CHARACTERISTIC OF BIG DATA"

"NEW HEALTH DATA IS GENERATED AND CAPTURED CONTINUOUSLY"

"VISUALISATION TOOLS AND TECHNIQUES ARE VITAL IN IDENTIFYING RELATIONSHIPS AND TO CONVEY INFORMATION"

Volume: Can SEDGE handle your data?

Although initially designed for use with genomic data, SEDGE is capable of handling many large and disparate datasets.

Veracity: Accurate analysis

SEDGE has been independently validated by BioSistemika: life sciences data managers. In two case studies of data analysis use, SEDGE was accurate in its analysis when comparing its results against known gene mutations or prior analysis.
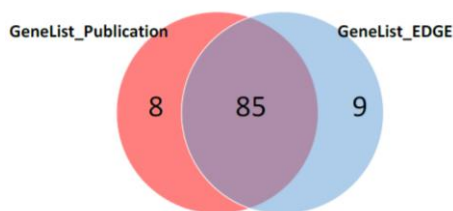

Figure 1. Gene expression signatures with biological relevance were **accurately** predicted by SEDGE and overlapped those identified in a research publication.

Variety: Predictive analytics

In-built algorithms, statistics, pattern recognition and interlinking correlation between various fields mean SEDGE has the ability for knowledge data discovery.

Velocity: Analysis at speed

EDGE's diverse functions don't mean a reduction in speed. Alongside powerful data analytics, SEDGE was designed with more in mind: fast computation.

Visual data

Not only accurate in its output, but SEDGE generates visual outputs, allowing the user to explore and visualise the data to aid interpretation and comprehension of data relationships.
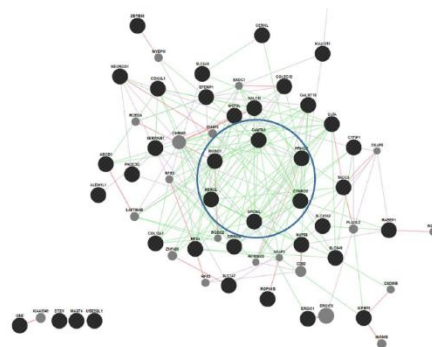

Figure 2. SEDGE **predicted** the 100 most statistically significant SNP mutations in chronic obstructive pulmonary disease (COPD). Of the 6 most connected genes (centre), 4 are directly associated with the disease.
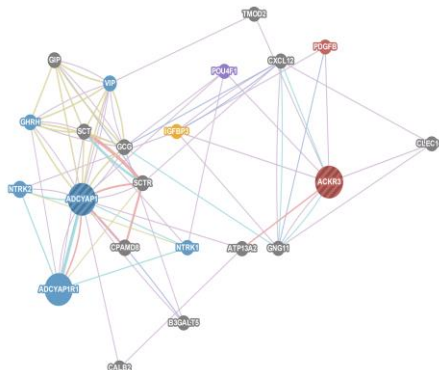

Figure 3. Easily identify relationships between data with **visual output**.

"WE DO THE WORK, YOU HAVE THE INSIGHTS"

If you would like SEDGE to process your structured and unstructured data, SVMPharma can manage SEDGE and all associated data analysis and results, leaving you with accurate analysis with visual output for minimal effort.

SVMPharma is an innovative strategic consultancy, specialising in Real World Evidence (RWE) for the pharmaceutical industry. SVMPharma generates RWE within UK and Europe through bespoke online Real World Treatment Evaluators, leading to successful health technology appraisal (HTA) submissions. Clinical trial programmes do not reflect real-world clinical practice and outcomes, RWE supplements and enhances clinical datasets. SVMPharma's specialist teams focus on delivering the outcomes that matter to your brand. SVMPharma also provides Global RWE, Patient Real World Outcomes, and Big Data Analytics.

To find out more call **+44 (0) 1256 962 220**