IMPROVING CLAIMS APPROVAL SPEED AND ACCURACY
for the social security administration

Elder Research combined state-of-the-art text mining algorithms with traditional statistical techniques to create a solution for ranking disability claims for approval. The results were more accurate and more consistent than any single doctor's decision and allowed 20% of the claims to be approved immediately.

INDUSTRY
- » Government
- » Healthcare

BUSINESS NEED
- » Automatically evaluate disability claims to determine which could be decided within a 21-day timeframe

SOLUTION
- » Utilized both data and text mining to expedite the processing of cases in need of immediate care

BENEFIT
- » Citizens in need of immediate care received aid more efficiently
- » Enabled immediate approval of 20% of claims

The Challenge

Identifying claims for disability that meet the requirements for approval was a time-consuming and error prone process. An analysis by the Social Security Administration showed that some claims were taking over two years to be processed, much too long for very ill or elderly claimants.

Claims data combined numerical, categorical and free-text data. The challenge was to effectively integrate the unstructured text describing each patient's symptoms with traditional structured data.

The Solution

In order to speed the claims approval process, Elder Research built an automated "express lane" to move the high-risk applications through the process more quickly. The text mining software automatically scanned incoming applications to approve high-risk applicants without forcing them to wait for the vast number of applications submitted before them to be processed. This solution used a data-driven statistical approach to text mining that combined features from both unstructured text and structured data. Expert knowledge and advanced algorithms were used to normalize the text, transform it into a numeric feature vector, combine it with the structured data, and feed it into traditional data mining algorithms. This approach enabled best-practices to be used for model evaluation to ensure that the final model was the most effective.

Results

Our combined approach exceeded the accuracy of previous automated approaches and was equivalent to the accuracy of the combined judgment of the review committee. This allowed 20% of the claims to be approved immediately which in turn allowed the organization to focus their resources on the most challenging cases and ensure that all statutory requirements were met.

About Elder Research

Elder Research is the U.S.'s leading consulting company in the science, practice, and technology of advanced analytics. We have helped government agencies and Fortune Global 500® companies solve real-world problems across diverse industries by amplifying the productivity of their analysts.