Abstrak

Sistem Pakar Identifikasi Awal Depresi Menggunakan Natural Language Processing

Tanpa disadari gangguan mental seringkali dimulai dengan gejala ringan seperti kecemasan dan depresi. Pada kasus depresi dengan jangka waktu yang lama dapat berakibat terganggunya pola pikir seseorang dan timbul keinginan bunuh diri. Berdasarkan data WHO pada tahun 2010 angka bunuh diri akibat depresi di Indonesia mencapai 1,6 sampai 1,8 per 100.000 jiwa. Sayangnya gejala gangguan depresi sering sulit dikenali karena rangkaian keluhan penderita berupa narasi medis atau teks yang tidak terstruktur yang ditulis oleh dokter. Sehingga untuk mendapatkan diagnosis dilakukan dengan mengekstrak gejala dari data keluhan yang berupa teks narasi medis.

Sistem pakar pada penelitian ini dibangun dengan penalaran berbasis aturan dan pohon keputusan karena proses aturan yang harus dipenuhi berurutan dari "masa gangguan depresi", "batas waktu keluhan" dan "jumlah gejala" hingga menghasilkan diagnosis. Pendekatan *natural language processing* digunakan untuk mengekstrak gejala pada narasi medis atau teks keluhan pasien.

Dari pengujian menggunakan 60 data sampel menunjukan 73% tingkat valid sehingga proses ekstraksi gejala menggunakan NLP pada data teks narasi keluhan medis dinilai kurang maksimal dilihat dari penurunan tingkat valid berdasarkan kategori gangguan depresi yang memiliki ketergantungan syarat jumlah gejala yang lebih banyak. Dari penilaian FGD sebanyak 88.6% setuju dimana 22,8% menyatakan sangat setuju pada saat mencoba sistem pakar yang dibangun dapat membantu pakar memudahkan proses penegakan diagnosis gangguan awal depresi.

Kata kunci

depresi, Natural Language Processing (NLP), sistem pakar

Abstract

Expert System for Early Identification of Depression Using Natural Language Processing

Unconsciously, mental disorders often begin with mild symptoms such as anxiety and depression. In the case of long period depression, they can result in a disruption of a person's mindset and street suicidal thoughts. Based on WHO data in 2010, the suicide rate due to depression in Indonesia reached 1.6 to 1.8 per 100,000 people. Unfortunately, the signs of depressive disorders are often difficult to be recognized because of the unstructured patients medical narrative report which is written by the doctors. In order to get the diagnosis, they extract symptoms from the medical narrative report.

The expert system in this study is designed with rule-based reasoning and decision trees because the rules process must be according to a particular sequence, from "periods of depressive disorder", "time limit complaints" and "number of symptoms" in order to produce a diagnosis. The natural language processing approach is applied to extract symptoms from medical narratives report or patient complaints text.

The examination of this thesis used 60 sample data and it shows 73% validation level so that the process of extracting symptoms using NLP in the medical complaints narrative text data is considered to be less than the maximum rate. It can be seen from the decrease of valid levels based on the category of depressive disorder that has a dependency on the number of symptoms. From the FGD assessments, 88.6% agreed which 22.8% strongly agreed after trying an expert system that was built to help experts facilitate the process of establishing the early diagnosis of depressive disorders.

Keywords

depression, Natural Language Processing (NLP), expert system