Computation of Diet Composition for Patients Suffering from Kidney and Urinary Tract Diseases with the Fuzzy Genetic System

International Journal of Computer Applications
© 2011 by IJCA Journal

Volume 36 - Number 6
Year of Publication: 2011

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10.5120/4499-6350
\cite{pxc3976350.bib}

Abstract

Determination of dietary food consumed a day for patients with diseases in general, greatly affects the health of the body and the healing process, and is no exception for people with
kidney disease and urinary tract. This paper presents the determination of diet composition in the form of food substance for people with kidney and urinary tract diseases with a genetic fuzzy approach. This approach combines fuzzy logic and genetic algorithms, which utilizing fuzzy logic fuzzy tools and techniques to model the components of the genetic algorithm and adapting genetic algorithm control parameters, with the aim of improving system performance. The Mamdani fuzzy inference model and fuzzy rules based on population parameters and generation are used to determine the probability of crossover and mutation, and was using In this study, 400 food survey data along with their substances was used as test material. From the data, a varying amount of population is established. Each chromosome has 10 genes in which the value of each gene indicates the index number of foodstuffs in the database. The fuzzy genetic approach produces 10 best food substance and their compositions. The composition of these foods has nutritional value in accordance with the number of calories needed by people with kidney and urinary tract diseases by type of food.

References