

# Accepted Manuscript

Title: A survey of nature-inspired algorithms for feature selection to identify parkinson's disease

Author: Prashant Shrivastava, Anupam Shukla, Praneeth Vepakomma, Neera Bhansali, Kshitij Verma

PII: S0169-2607(15)30209-1

DOI: <http://dx.doi.org/doi: 10.1016/j.cmpb.2016.07.029>

Reference: COMM 4215

To appear in: *Computer Methods and Programs in Biomedicine*

Received date: 22-9-2015

Revised date: 5-6-2016

Accepted date: 20-7-2016

Please cite this article as: Prashant Shrivastava, Anupam Shukla, Praneeth Vepakomma, Neera Bhansali, Kshitij Verma, A survey of nature-inspired algorithms for feature selection to identify parkinson's disease, *Computer Methods and Programs in Biomedicine* (2016), <http://dx.doi.org/doi: 10.1016/j.cmpb.2016.07.029>.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## Highlights

- We perform a comparative analysis of nature inspired-algorithms for feature selection to aid the classification of affected Parkinson's patients from the rest.
- Feature selection was applied to datasets of Gait & Speech of Parkinson's Patients.
- Binary Bat Algorithm outperformed traditional techniques like Particle Swarm Optimization (PSO), Genetic Algorithm and Modified Cuckoo Search Algorithm.

# A Survey of Nature-Inspired Algorithms for Feature Selection to Identify Parkinson's Disease

Prashant Shrivastava<sup>†</sup> Anupam Shukla<sup>†</sup> Praneeth Vepakomma<sup>†§</sup>

Neera Bhansali<sup>△</sup> Kshitij Verma<sup>†</sup>

<sup>†</sup>Indian Institute of Information Technology & Management, Gwalior, Madhya Pradesh 474010, India

<sup>¶</sup>Department of Electrical & Computer Engineering, Florida International University

<sup>§</sup>Motorola Solutions, USA

<sup>△</sup>Integrated Biostatistics and Data Management Center, Florida International University

Email: prashantshri007@gmail.com, anupamshukla@iiitm.ac.in, praneeth.vepakomma@fiu.edu  
nbhansal@fiu.edu, vermaksh@gmail.com

**Abstract—Background and Objectives:** Parkinson's disease is a chronic neurological disorder that directly affects human gait. It leads to slowness of movement, causes muscle rigidity and tremors. Analyzing human gait serves to be useful in studies aiming at early recognition of the disease. In this paper we perform a comparative analysis of various nature inspired algorithms to select optimal features/variables required for aiding in the classification of affected patients from the rest.

**Methods:** For the experiments, we use a real life dataset of 166 people containing both healthy controls and affected people. Following the optimal feature selection process, the dataset is then classified using a neural network.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات