UNIVERSIDAD AUTÓNOMA DE ZACATECAS

"Francisco García Salinas"

COORDINACIÓN DE INVESTIGACIÓN Y POSGRADO

01/12/2016

Informes del Investigador: LUIS OCTAVIO SOLIS SANCHEZ Semestre: 1617snon

Registro: UAZ-2010-35749 **Avance** 90%

Proyecto

SISTEMA DE MONITOREO E IDENTIFICACION DE PLAGAS MEDIANTE VISION ARTIFICIAL APLICADO A LA AGRICULTURA DE PRECISION

Registro: UAZ-2013-36378 **Avance** 95%

Proyecto

Tecnología de nueva generación para la producción intensiva bajo ambiente controlado

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Registro: UAZ-2016-37014 **Avance** 0%

Proyecto

ESTABLECIMIENTO DE UN PROTOTIPO DE BIOIMPRESORA 3D (4D)//CNC-ADICIÓN, CON UTILIDAD EN REGENERACIÓN DE TEJIDOS.

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Informes del Investigador: LUIS OCTAVIO SOLIS SANCHEZ Semestre: 1617snon

Registro: UAZ-2016-37141 **Avance** 0%

Proyecto

LABORATORIO DE INNOVACION Y DESARROLLO TECNOLOGICO EN INTELIGENCIA ARTIFICIAL

	Informes del proyecto	
Tipo de producción	Título	Fecha
CAPÍTULO DE LIBRO	Generalized Regression Neural Networks with Application in Neutron Spectrometry	19/10/2016

Registro: UAZ-2016-37142 **Avance** 0%

Proyecto

CENTRO DE CALCULO AVANZADO VINCULADO AL LABORATORIO DE INNOVACION Y DESARROLLO TECNOLOGICO EN INTELIGENCIA ARTIFICIAL

Aval Consejo de Unidad

Recibido de Investigación y Posgrado

Chapter 3

Generalized Regression Neural Networks with Application in Neutron Spectrometry

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Additional information is available at the end of the chapter

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Abstract

The aim of this research was to apply a generalized regression neural network (GRNN) to predict neutron spectrum using the rates count coming from a Bonner spheres system as the only piece of information. In the training and testing stages, a data set of 251 different types of neutron spectra, taken from the International Atomic Energy Agency compilation, were used. Fifty-one predicted spectra were analyzed at testing stage. Training and testing of GRNN were carried out in the MATLAB environment by means of a scientific and technological tool designed based on GRNN technology, which is capable of solving the neutron spectrometry problem with high performance and generalization capability. This computational tool automates the pre-processing of information, the training and testing stages, the statistical analysis, and the post-processing of the information. In this work, the performance of feed-forward backpropagation neural networks (FFBPNN) and GRNN was compared in the solution of the neutron spectrometry problem. From the results obtained, it can be observed that