

TOPIC OF RESEARCH

Jozef Goga
jozef.goga@stuba.sk
Part of MLGroup



SLOVAK UNIVERSITY OF
TECHNOLOGY IN BRATISLAVA
FACULTY OF ELECTRICAL ENGINEERING
AND INFORMATION TECHNOLOGY

INTRODUCTION

Male, 28

- Degree: M.Sc. (2017)
- Position: doctoral student



- Number of articles: 6
- Number of supervised bachelor theses: 2

- Current job: Institute of Robotics and Cybernetics (IRC), FEI STU
- Research interest: artificial neural networks, computer vision, biometrics and wavelet analysis
- Member of national projects: MLbiomedia - advanced methods of machine learning to design biometric and medical diagnostic systems (1/0867/17), VEGA

TOP REFERENCES

KAJAN, Slavomír - GOGA, Jozef - LACKO, Kristián - PAVLOVIČOVÁ, Jarmila. Detection of diabetic retinopathy using pretrained deep neural networks. In 2020 Cybernetics & Informatics (K&I), 30th International Conference. Velké Karlovice, Czech Republic. 2020. 1. ed. Danvers : IEEE, 2020, [5] s. ISBN 978-1-7281-4381-1.

KAJAN, Slavomír - GOGA, Jozef - ZSÍROS, Ondrej. Comparison of algorithms for dynamic hand gesture recognition. In 2020 Cybernetics & Informatics (K&I), 30th International Conference. Velké Karlovice, Czech Republic., 2020. 1. ed. Danvers : IEEE, 2020, [5] s. ISBN 978-1-7281-4381-1.

GOGA, Jozef - KAJAN, Slavomír. Hand gesture recognition using 3D sensors. In Proceedings ELMAR-2017 : 59th International symposium. Zadar, Croatia. 2017. pp. 181-184. ISBN 978-953-184-230-3.

KAJAN, Slavomír - GOGA, Jozef. Rozpoznávanie gest ruky pomocou konvolučných neurónových sietí. In ATP Journal plus : Výskum v kybernetike na FEI STU v Bratislave. č. 2 (2019), s. 51-55. ISSN 1336-5010.

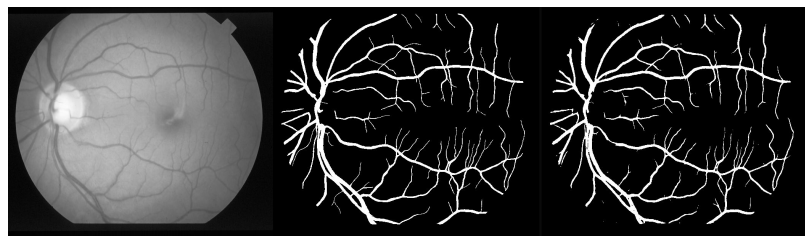
RESEARCH

DIABETIC RETINOPATHY DETECTION

Technologies:
Convolutional Neural Networks
Morphological Image Processing

Achievements:

- Improved classification of diabetic retinopathy symptoms in retina images based on the degree of damage via transfer learning
- Analysis of different methods for segmentation of blood vessels in retina images

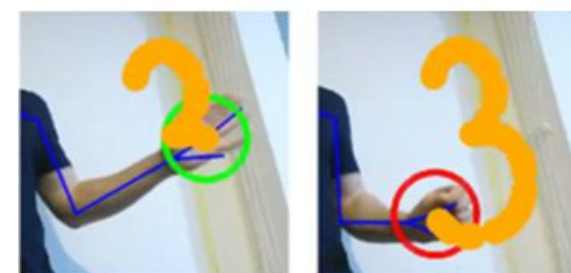


HAND GESTURE RECOGNITION

Technologies:
Artificial Neural Networks
Dynamic Time Warping
Hidden Markov Models

Achievements:

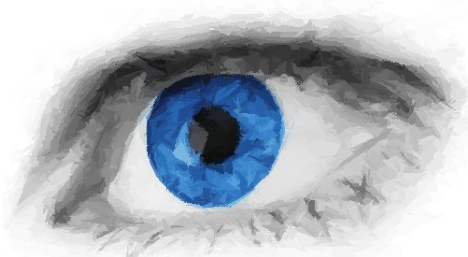
- Real-time hand gesture recognition based on 3D sensors
- Analysis of recognition accuracy using a deep learning approach in different spectra
- Creation of a static and dynamic database of hand gestures released in the public domain



IRIS RECOGNITION

Achievements:

- Creation of the largest list of human iris databases available at <https://irisdata.fei.stuba.sk>
- Elaboration and critical analysis of available databases
- Collection of databases from around the world (probably the largest image collection of human irises)
- Analysis of specific and non-standard forms of research in this field
- Creation of a list of competitions and challenges in iris recognition and segmentation
- Creation of recommendations for creating and maintaining iris database



BRADYKINESIA DETECTION

Technologies:
Artificial Neural Networks

Achievements:

- Real-time tracking of fingertip positions with Leap Motion sensor
- Verification using three-axis gyroscopes
- Development of application for analysis and storage of measured data on clinical patients

