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Brain-inspired computer vision with applications to pattern recognition and computer-aided diagnosis of glaucoma

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Research Activities

Journal Papers

- Jiapan Guo, Chenyu Shi, George Azzopardi, Nomdo M. Jansonius and Nicolai Petkov, *Automatic analysis of retinal fundus images for glaucoma screening based on vertical cup-to-disc ratio*, submitted.
- Jiapan Guo, Chenyu Shi, George Azzopardi and Nicolai Petkov, *Inhibition-augmented COSFIRE model of shape-selective neurons*, IBM journal special issue on Computational Neuroscience, Volume 61, Issue 2, pages 10:1-10:9, 2017.
- Jiapan Guo, Chenyu Shi, George Azzopardi and Nicolai Petkov, *Inhibition-augmented trainable COSFIRE filters for keypoint detection and object recognition*, Machine Vision and Applications, Volume 27, Issue 8, pages 1197-1211, 2016.

Conference Proceedings

- Jiapan Guo, Chenyu Shi, George Azzopardi, and Nicolai Petkov, *Recognition of architectural and electrical symbols by COSFIRE filters with inhibition*, In Computer Analysis of Images and Patterns, volume 9257 of Lecture Notes in Computer Science, pages 348-358. Springer International Publishing, 2015.
- Chenyu Shi, Jiapan Guo, George Azzopardi, Joost M. Meijer, Marcel F. Jonkman, and Nicolai Petkov, *Automatic differentiation of u- and n-serrated patterns in direct immunofluorescence images*, In Computer Analysis of Images and Patterns (CAIP 2015), volume 9256 of Lecture Notes in Computer Science, pages 513-521, 2015.
- Chenyu Shi, Joost M. Meijer, Jiapan Guo, George Azzopardi, Marcel F. Jonkman, and Nicolai Petkov. *Automatic classification of serrated patterns in direct immunofluorescence images*, In 8th GI Conference on Autonomous Systems, volume 842, pages 61-69, 2015.
- Jiapan Guo, Chenyu Shi, Nomdo M. Jansonius, and Nicolai Petkov. *Automatic Optic Disk Localization and Diameter Estimation in Retinal Fundus Images*, In 8th GI Conference on Autonomous Systems, volume 842, pages 70-79, 2015.

Attended Conferences and workshops

- 1st Cognitive Computing on Medicine (COCOMED), Las palmas Gran Canaria, Spain, 2017
- 8th GI Conference on Autonomous Systems, Cala Millor Majorca, Spain, 2015
- 16th International Conference on Computer Analysis of Images and Patterns (CAIP), Valletta, Malta

Summer Schools

- ICVSS, International Computer Vision Summer School, Calabria, 14–20 July 2013.

