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

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Stellingen

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Brain-inspired Computer Vision with Applications to Pattern Recognition and Computer-aided Diagnosis of Glaucoma

van

Jiapan Guo

1. Neurophysiological evidence shows that neurons in different layers of the visual cortex receive also inhibitory inputs. *-cit. Hubel 1988*
2. The proposed inhibition improves selectivity of COSFIRE filters.
3. Inhibition-augmented COSFIRE filters are effective in different computer vision applications.
4. The relationship of inhibition and excitation resembles the Chinese philosophy of Yin-Yang. While they are opposite forces, they interrelate to enhance each other.
5. It is not sufficient for a computer-aided diagnosis system for glaucoma screening to flag a fundus image as from a healthy retina or not. The measurement of vertical cup-to-disc ratio is more beneficial to medical experts for monitoring the progression of the disease.
6. The combination of vascular-selective and disc-selective filters is more robust to contrast variations and uneven illumination in optic disc localisation than the circular Hough transform.
7. The benefits of international workshops go beyond the acquisition of scientific and presentation skills. They also enrich your culinary portfolio.
8. There are two types of reviewers; one type that teaches you how to write a constructive review and the other type that teaches you of how *not* to write a review.
9. The complete set of skills of a scientist must include the ability to remain persistent even when reviewers do not appreciate your work.