Graduate School of Science and Technology
Information Science and Technology
Neuroscientific Infomatics

Finding the novel algorithms in the Brain

Keywords: Neuroscience, Experimental Psychology
Digital Signal Processing

Principal investigator: Motoharu Takao, Ph.D.

Background and Motivation

I have pursued the studied on neural circuit of mammalian retina as a neuroscientist. Retinal circuit is an attractive biological model to understand the principles of complicated human brain functions. The new discoveries in my lab will give the clues to findings of novel algorithms for efficient information processing in computers.

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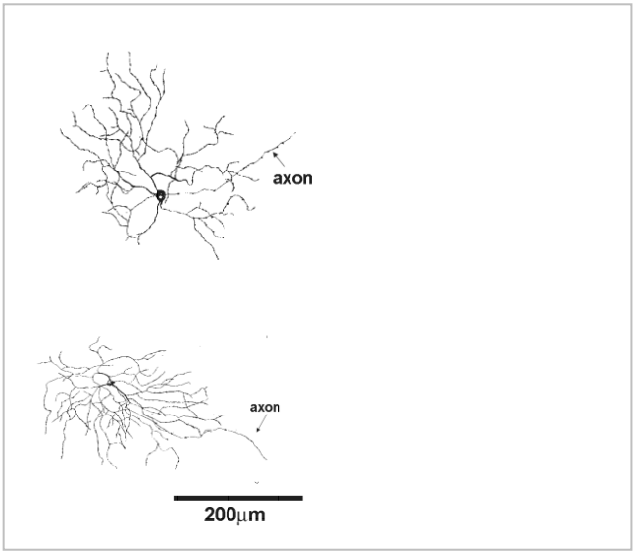
Originality

So far, my colleagues and I have found some redundancy in retinal local circuits. The redundant processing of visual information provides robustness to mammalian visual system. We are learning these biological systems to apply to computer vision. Slightly redundant algorithms will enable visual images or motions to be processed more efficiently and robustly.



Impact and Perspective

Our goal is to create the information processing system which is so excellent as human brain.

Published papers from the group

J . Neurosc i . (2007)27:6261－6267, CyberPsychol . Behav. (2009) 1 2 : 501-507; Chronobiol . Int . (2009) 2 6 : 1470－1477; Cel l Tissue Res. (2009) 338: 355-357

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