

Semantic, Cognitive, and Perceptual Computing: Advances toward Computing for Human Experience

Amit Sheth and Pramod Anantharam, [Kno.e.sis](#), Wright State University
Cory Henson, Bosch Research and Technology Center

The next important focus of human centered computing is to endow the Web, and computing in general, with sophisticated, human-like capabilities to reduce information overload. In the near future, computers will be able to process and analyze data, in a *highly contextual and personalized* manner, at a scale much larger than the human brain is able to handle.

Cognitive Machine-to-Machine Communications: Visions and Potentials for the Smart Grid

Yan Zhang, Simula Research Laboratory and University of Oslo, Norway
Rong Yu, Guangdong University of Technology, China
Maziar Nekovee, BT Research and Technology, UK
Yi Liu, Shengli Xie, Guangdong University of Technology, China
Stein Gjessing, Simula Research Laboratory and University of Oslo, Norway

Cognitive radio enabled machines are able to sense and utilize unused frequency bands in their surroundings. Cognitive radio utilizes the potential that wireless systems have when they are *context aware and capable of reconfiguration based on their environments* and their own properties.

Text Mining for Biology and Biomedicine

by Sophia Ananiadou, John McNaught

With the volume of biomedical research growing exponentially worldwide, the demand for *information retrieval* expertise in the field has never been greater. Here's the first guide for bioinformatics practitioners that puts the full range of biological *text mining* tools and techniques at their fingertips in a single dedicated volume. It describes the methods of *natural language processing* (NLP) and their applications in the biological domain, and spells out the various *lexical, terminological, and ontological* resources at their disposal - and how best to utilize them.