

## Research Opportunities in Semantic Computing, Semantic Search, Semantic Web & Semantic-Oriented Programming

**Semantic Computing:** Semantic Computing addresses technologies which facilitate activities that allow users to create, manipulate or retrieve computational content based on semantics (“meaning”, “intention”), where “content” may be anything such as video, audio, text, software, hardware, network, environment, process, etc.

Sheu, P., Yu, H., Ramamoorthy, C., Joshi, A., Zadeh, L. (Editors) (2010) *Semantic Computing*, Wiley-IEEE Press

7th IEEE International Conference on Semantic Computing, September 16-18, 2013, Irvine, California, USA, (<http://iee-icsc.org/icsc2013/>).

**Semantic Search:** Semantic search is a data searching technique in which the search results are based on the meaning of the query or words used for search.

Kotzakolios, M. (2013) *WEB 3.0: Semantic Search*, Kindle

De Virgilio, R., Guerra, F. & Velegrakis, Y. (2012) *Semantic Search over the Web (Data-Centric Systems and Applications)*, Springer

What is Semantic Search and how it works with Google search -

<http://www.techulator.com/resources/5933-What-Semantic-Search.aspx>

**Semantic Web:** "The Semantic Web is an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation." Berners-Lee et al

Allemang, D. & Hendler, J. (2011) *Semantic Web for the Working Ontologist, Second Edition: Effective Modeling in RDFS and OWL*, 2nd Ed., Morgan Kaufmann

Berners-Lee, T., Hendler, J. & Lassila, O. (2001) The Semantic Web, *Scientific American*, May 2001.

Antoniou, G., Groth, P., Harmelen, F. & Hoekstra, R (2012) *A Semantic Web Primer (Cooperative Information Systems series)*, MIT Press.

Hebeler, J. Fisher, M., Blace, B. & Perez-Lopez, A. (2009) *Semantic Web Programming*, Wiley

Leos, J. (2006). A Semantic Web Programming Language. Retrieved on August 6, 2010 from [esw.w3.org/SemWebProgrammingLanguage](http://esw.w3.org/SemWebProgrammingLanguage)

**Semantic-Oriented Programming :** A programming approach in which meaning plays the most important role (not syntax).

Semantic Object-Oriented Programming - <http://www.semanticoop.org/>

Goal Oriented Programming Semantics - <http://groups.csail.mit.edu/o2s/goals.html>