

# George D. Karakatsiotis

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## Personal Information

- Age: 28
- Place of Birth: Athens, Greece

## Education

- 2010-PRESENT **Ph.D. in Technologies for disabled people**  
Focusing on a system that translates sign language  
Athens University of Economics and Business  
ADVISOR: Prof. Ion Androutsopoulos
- 2005-2007 **M.Sc. in Computer Science**  
Athens University of Economics and Business  
GRADE: 8.25 / 10  
THESIS TITLE: Extending a Natural Language Generation Engine to produce comparisons  
GRADE: 9 / 10  
ADVISOR: Prof. Ion Androutsopoulos
- 2001-2005 **B.Sc. in Informatics (orientation in Computer Science)**  
Athens University of Economics and Business  
GRADE: 7.47 / 10 (top 10,07%)  
THESIS TITLE: Developing a system to handle person definition questions for newspaper archives  
GRADE: 10 / 10  
ADVISOR: Prof. Ion Androutsopoulos

## Awards

- SUMMER 2011 Touring Machine took 1<sup>st</sup> place in the world finalists of the Imagine Cup competition (organized by Microsoft), in the interoperability category. Touring Machine is a platform that generates personalized tours that can be used for educational purposes. It is available in three versions: web edition (Silverlight), mobile edition (for Windows Phone 7) and a desktop application (that uses augmented reality).
- SPRING 2010 1<sup>st</sup> place in the Greek finals of the Imagine Cup, for developing Touring Machine,

## Conferences /Summer Schools

- SUMMER 2007 "Presence: towards human machine confluence", Peach
- SUMMER 2006 "Robots Intelligently Interacting With People", Foundation Of Research and Technology Hellas (FORTH)

## Languages

- ENGLISH Fluent (Certificate of Proficiency, University of Cambridge)
- GREEK Native Language

**Volunteer experience**

SUMMER 2004 Tec Workstation Venue Technician at the 28<sup>th</sup> Olympic Games in Athens

2003-2004 Involved in the BANKeVAL 2004 research project of prof. Em. Giannakoudakis regarding the evaluation of web sites and Internet services of 34 Greek and international banks

**Technical skills**

PROGRAMMING C, C++, C#, Silverlight, WPF, Java (J2SE/J2ME/J2EE), JavaScript, JavaFX, Prolog, SQL, HTML/CSS, Visual Basic, XML, OWL, DirectX, Portlets

OPERATING SYSTEMS Linux, MS-DOS, Windows XP/Vista/Server 2003/7, Symbian OS, MacOS X

NETWORKING Tomcat, IIS, DHCP, NAT, Active Directory, DNS

DBMS MySQL, SQL Server 2000

APPLICATIONS MS Visual Studio, MS Office, MS Visio, MS Project, Adobe Photoshop, Adobe Dreamweaver & Flash, NetBeans, Eclipse, 3d Studio Max

**Working Experience**

08/2009-PRESENT DAY Working as a Software Engineer in the European research project Poeticon ([www.poeticon.eu](http://www.poeticon.eu)) for the Institute for Language and Speech Processing. I am developing the PRAXICON, a multimodal database, and its GUI, along with advanced mechanisms for auto-population and reasoning.

02/2008-08/2009 Working as a Software Engineer in the R&D department of Intracom Telecom. I was developing applications for mobile phones in J2ME and I was taking part in the European research projects SmoothIT and Intermedia.

10/2007-04/2008 Working as a Research Assistant in the European research project Indigo. I developed the infrastructure which allows us to transfer the NaturalOWL NLG system in the Second Life world.

05/2007-10/2007 Working as a Research Assistant in the research project Xenios. I extended the Natural Language Generation Engine of the Xenios project (NaturalOWL) to produce comparisons and spatial expressions.

SPRING 2004 Systems and Network Administrator of the Computer Science Laboratory at AUEB (part of internship program).

**Publications**

D. Galanis, G. Karakatsiotis, G. Lampouras and I. Androutsopoulos, "An Open-Source Natural Language Generator for OWL Ontologies and its Use in Protege and Second Life". System demonstration, 12th Conference of the European Chapter of the Association for Computational Linguistics (EACL 2009), Athens, Greece, 2009.  
[http://nlp.cs.aueb.gr/pubs/naturalowl\\_eacl2009.pdf](http://nlp.cs.aueb.gr/pubs/naturalowl_eacl2009.pdf)

G. Karakatsiotis, D. Galanis, G. Lampouras and I. Androutsopoulos, "NaturalOWL: Generating Texts from OWL Ontologies in Protege and in Second Life". System demonstration, 18th European Conference on Artificial Intelligence,

Patras, Greece, 2008.

[http://www.aueb.gr/users/ion/docs/ecai2008\\_naturalowl.pdf](http://www.aueb.gr/users/ion/docs/ecai2008_naturalowl.pdf)

G. Karakatsiotis, M. Makidis, K. Lambropoulou, T. Bozios, N. Ioannidis, "Annotating virtual worlds for richer user experiences and personalized services". Workshop on Hyper-media 3D Internet, Geneva, Switzerland, 2008.

Oberlander, J., et al., Building An Adaptive Museum Gallery In Second Life, in J. Trant and D. Bearman (eds.). *Museums and the Web 2008: Proceedings*, Toronto: Archives & Museum Informatics. Published March 31, 2008. Consulted May 25, 2008.

<http://www.archimuse.com/mw2008/papers/oberlander/oberlander.html>

## Interests and activities

Member of the AUEB's Natural Language Processing Group (<http://nlp.cs.aueb.gr/>), cinema (sci-fi & adventures), PnP RPGs, travelling

## Recent Projects

**Building an autonomous robot guide in Second Life.** I developed the infrastructure which allows us to transfer the NaturalOWL NLG system in the Second Life world (there is a demo at <http://www.vimeo.com/801099?pg=embed&sec=801099>)

**Extending a Natural Language Generation Engine** (NaturalOWL –an NLG that generates description of entities from an OWL file), so that it could compare the describing entity with the entities that it has already described or with all the entities of the collection ("Whereas all the previous ...", "Like the amphora that you saw earlier..."). I also extended it so that it could generate spatial expressions ("Like the coin on your left..."). The application is written in Java

**Developing a VoIP application for smart phones with Windows Mobile 5.** We also implement point to point security using a symmetric algorithm (Triple DES)

**Developing a Greek spell checker.** The application uses the OpenOffice's dictionary which contains roughly 500.000 words. The distance metric is calculated according to the algorithm of Levenstein. The application was developed in C# and requires the .NET framework. Project's aim was to develop an algorithm that would decide which words of the dictionary should be compared with the word that the user typed (so that it would not have to check all 500.000 words). Finally, our speller has a constant upper bound, with no dependence on the size of the dictionary. It also has the following features:

- Longer the word, faster the program's responses
- It can correct any anagrammatism (one of the most usual types of orthographic errors)
- It can correct up to 3 errors, in real time

**Developing a greeklish converter,** using the aforementioned spell-checker. The converter is available in various versions:

- Standalone application
- Web application
- MSN Messenger Add-on
- MS Word 2007 Add-in
- MS Outlook 2007 Add-in
- Firefox Add-on
- Thunderbird Add-on

- Internet Explorer 8 Accelerator
- Vista gadget
- Silverlight version
- Facebook application

**Developing a Massively Multiplayer On-line Game for smart phones (Mobile MMOG).** The application was written in Java ME

**A typical implementation of the popular game Minesweeper Flags for two players.** The goal of each player (human and computer) is to find and uncover as many mines as possible. This A.I. implementation uses Propositional Logic for knowledge representation and a variant of the DPLL algorithm for reasoning. The application was written in C# 2.0 and requires the .NET framework 2.0

**A typical implementation of the popular game Backgammon.** This AI implementation uses a combination of Hill Climbing and MiniMax algorithms. The application was written in C# 2.0 and requires the .NET framework 2.0

**Developing a system handling person definition questions for newspaper archives.** The system uses the traditional search engine of a newspaper to retrieve a corpus from the newspapers archive. Then our system uses SVMs and tries to pinpoint the definition for that person. For example "Who is George W. Bush?" the answer should be "President of the United States."

**Developing a system that detects the execution of forbidden application in a LAN**

**Implementation of the Tic-Tac-Toe game for one player (against the program's A.I.) or two players (using a Bluetooth connection),** designed for Symbian OS & S60 devices

**Implementation of a full distributed chat, with no central control.** For the synchronization of the participants we used vector clocks. The application was developed in C# and requires the .Net framework

**Developing of a MiniJava compiler (MiniJava is a subset of Java).** The compiler performs lexical, syntactic and semantic analysis of the source program (and creates a symbol table and an abstract syntax tree in the process) and, if the source program is found error-free, it generates the JVM bytecode. The compiler was written in java

**Developing a multimedia application for weather forecasting.** The application downloads the weather information from the Internet, an XML file, and it shows the weather to the user by using text, animations, 3d graphics (managed DirectX 9) and sound (Text-To-Speech)

**Developing of the Othello (Reversi) game in C++ and DirectX 8.1.** The app uses the MiniMax algorithm (more precisely, the improved AB variant) and a heuristic function for the computer to decide its next move. The depth of the AB algorithm is changing proportionally to the number of the possibly moves