

# Slavko Žitnik

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## Employment

- 2014–2014 | **Microsoft Development Center Norway, Oslo**  
Software Development Engineer in Test Intern  
The research and development center [MDCN](#) in Oslo focuses on information retrieval technologies within the enterprises. Their services are used by Microsoft's products such as Office, Sharepoint, Exchange and others. As an intern I participated in the feeding team, which goal is to extract appropriate data from a document and feed the index with it. My task was to enable the embedded documents parsing, calculate expected index growth, monitor the three-phase deployment process across all the farms in the world and provide reports that show the correct behaviour of the feature. With a group of four buddies we attended the internal Microsoft hackathon, where we proposed an algorithm and implemented a prototype that enables the expert search in Microsoft Delve. My role was to design an algorithm for expertise extraction and experts ranking. The local management liked the idea of our approach, so we also presented it in Redmond, where they decided to apply it for a patent.
- 2011–2014 | **Optilab d.o.o. & University of Ljubljana**  
Junior Researcher from Industry  
[Optilab](#) is a company, which focuses mainly on fraud management systems - [Admiral](#). As a Junior Researcher I try to merge data from arbitrary data sources and extract structured data from textual sources, which can help in anomaly detection. I am also trying to transfer research results into usable prototypes or end products. Furthermore, I am responsible for [science and tech talks](#) organization at Optilab. My research is conducted at the [Faculty of Computer and Information Science](#), in [Laboratory for Data Technologies](#), under supervision of [Prof. Dr. Marko Bajec](#). My field of research is focused on information extraction (i.e., entity extraction, relation extraction and coreference resolution) from textual data, for which most of my research-based source code is [publicly available](#).

## Education

- 2010–2014 (expected) | *I submitted the doctoral dissertation to the senate and the commission will reply with an answer in three months, so I will presumably defend it in november 2014.* **PhD** University of Ljubljana, Faculty of Computer and Information Science, *Ljubljana, (GPA of 9.0 on scale 1-10)*, Operation financed by Slovene Ministry of Economic Development and Technology and European Social Fund.
- 2006–2010 | **BSc** University of Ljubljana, Faculty of Computer and Information Science and Faculty of Mathematics and Physics, *Ljubljana, (GPA of 9.0 on scale 1-10)*, Interdisciplinary University Program of Computer Science and Mathematics
- 2002–2006 | Upper Secondary School of Electrical and Computer Engineering, Vegova, *Ljubljana, summa cum laude*, Technical Gymnasium

## Honors, awards & fellowships

2013	First place in relationship extraction between proteins and genes from biomedical texts for gene regulatory networks construction at the BioNLP 2013 challenge.
2013	Seventh place in drugs and chemical compounds recognition from biomedical texts at the CHEMDNER challenge.
2010	Gold medal as a Cisco specialist at the EuroSkills 2010 competition.
2010	First place as an IT team at the SloSkills 2010 competition.
2010	Faculty award for best students.
2009	Bronze medal at the Imagine Cup Competition.
2007	Faculty award for best students.
2002–2010	Zois fellowship.

## Teaching

2009–present	CCNA courses instructor at the Cisco Networking Academy. Lecturing, conducting exercises and marking for CCNA 1–4 classes.
2010–2012	Teaching assistant for computer networking classes at Vocational College Kranj. Conducting exercises and helping students at practical work on Cisco network appliances.
2008–2010	Teaching assistant for programming classes at the Faculty of Computer and Information Science (Java, C and Python). Helping and mentoring undergraduate students at programming exercises.

## Skills history & challenges

2014	<b>Krimar.si and Mikro Graf Art d.o.o.</b> Independed design and implementation of the new application Sociogram 5.0. The new version supports end-to-end sociometric analysis for schools, teams and industry. Due to existing customers excitements about Sociogram v4.01 we added new functionalities and also supported additional languages.
2014	<b>SloSkills 2014</b> , ICT competition Technical leader, Judge.
2013	<b>Lajkbuk.si</b> Idea and development of a <a href="#">Facebook like platform</a> using Spring (MVC, Social, Security) Framework and Hibernate. The platform enables the automatic arrangement of Facebook prize competitions for companies that would like to get more likes for their Facebook pages.
2013	<b>Institute of Clinical Neurophysiology</b> , Ljubljana Development of a register of extrapyramidal diseases in Spring (WebFlow, Security) Framework, JSF 2.0 and Hibernate.
2012	<b>WorldSkills Europe 2012</b> , Spa-Franchorchamps Slovenian Team Leader.
2012	<b>SloSkills 2012</b> , Ljubljana Cisco specialist judge and supervisor to a winning ICT Team.
2011	<b>Vegova Skills 2011</b> High school competition organizer.
2010	<b>EuroSkills 2010 Competition</b> , Lisbon <i>Gold medal as Cisco specialist</i> (also the <a href="#">name of week</a> on Slovenian national radio station), Silver medal as a team, Gold medal as the best Slovenian competitor.
2010	<b>Nokia App Forum Competition</b> Development of mobile application <a href="#">MobiFoto</a> in Symbian Qt and backend application with web services in PHP.
2010	<b>Si.Mobil Android Competition</b> Development of a <a href="#">MobiFoto prototype</a> on Android 2.0.
2010	<b>SloSkills Competition</b> <i>First place as an Office ICT Team</i> with my role as Cisco specialist.

2010	<p><b>ACM High school Competition</b> Co-organization and development of a custom module for Moodle - coloring input source code, automatic PDF report generation.</p>
2010	<p><b>Abito d.o.o.</b> Co-authoring Computer networks e-learning materials for Slovenian Vocational Colleges, Sharepoint Server administration.</p>
2009	<p><b>Mikro Graf Art d.o.o.</b> Fully independent design and development of <a href="#">Sociogram v4.01</a>. Java-based software with automatic licensing, which is <i>currently used by more than 50 Slovenian primary schools</i>.</p>
2009	<p><b>Imagine Cup Competition</b> <i>Team leader, Bronze medal</i> for design and development of information system, project I See You Know. Project <a href="#">I See You Know</a> is natural disaster information system, aiming at fast and quality coordination between civil service and dispatching information to public, written in ASP.NET C# and Windows Mobile.</p>
2008	<p><b>Mikro Graf Art d.o.o.</b> Fully independent design and development of <a href="#">CrossManager 1.0</a> - a sports timing software, written in C# and WPF, that supports competitors import, barcode scanning at finish line and automatic report and diploma generation. The software is still used to organize cross competitions in Ljubljana primary schools.</p>
2008–2009	<p><b>Avtenta.si</b> Integration of call log data streams between three different call center systems. Development of a meeting minutes application on Sharepoint 2007 server for Telekom Slovenije d.d.. Development of internal phonebook and reports application in ASP.NET and Cisco Call Manager (CDR) for brokerage house Argonos.</p>
2008	<p><b>Marg d.o.o.</b> Second place at a student competition. Design and development of a social network <a href="#">M:ravljšče</a> (eng. Anthill) in Mobitel's (Slovenian national mobile operator) proprietary platform Pla.NET.</p>
2007	<p><b>Hermes Softlab d.o.o.</b>, Vendors department Development of a Timecard application for The SEZ Group in Java SE and Jasper Reports. Development of a wafer control server for The SEZ Group in C++.</p>
2007	<p><b>Hermes Softlab d.o.o.</b> Summer school participant, development of a web application in Java EE, Hibernate and ZKOSS UI framework.</p>

## Associations

2012–present	<p><b>Doctoral consortium of the University of Ljubljana</b> As a representative of the doctoral students at the University of Ljubljana I cooperated in decision making regarding the doctoral curriculum changes. Additionally, the main role of the consortium is to approve PhD thesis proposals. Because of that I learned a lot about the definition of a scientific excellence for specific reasearch areas.</p>
2012–present	<p><b>Association of Doctoral Candidates in Slovenia</b> As a board member of <a href="#">the association</a> I co-organized <a href="#">a two-day conference</a> regarding the employment possibilities of PhD students in industry after they graduate. I was a chairman of comitee for selection of the best PhD supervisor of year 2013 in Slovenia. I also reorganized the IT infrastructure of the association (usage of central document repository, mailing lists - MS Office 365, web page).</p>
2008–2010	<p><b>Electrical engineering students' European Association</b> As a member and oversight comitee I co-organized <a href="#">JobFair</a> 2009 and 2010 events. This is a yearly fair at the Faculty of Computer and Information Science in Ljubljana, intended to connect students and companies. I also reorganized internal IT structure of the association (mailing lists, documents, permissions, transition to Google Apps).</p>

## Review activities

Computational Linguistics.  
Journal of Computer Science and Technology.  
IEEE RCIS – International Conference on Research Challenges in Information Science.  
CAiSE – International Conference on Advanced Information Systems Engineering.  
ADBIS – East-European Conference on Advances in Databases and Information Systems.

## Publications

### Books

Žitnik S. and Bajec M. (2013). Text Mining in Medicine, Chapter in *Computational Medicine in Data Mining and Modeling*, New York: Springer, pp. 105-134. □

### Peer Reviewed Journals

Žitnik S., and Bajec M. (2014). Iterative joint extraction of entities, relationships and coreferences from text sources, in *Information Systems*, pp. 1-17. [TO SUBMIT]

Žitnik S., Žitnik M., Zupan B., and Bajec M. (2014). Multiple linear-chain conditional random fields with a meta-classifier for extracting chemical entity mentions, in *Journal of Cheminformatics*, pp. 1-17. [IN REVIEW]

Žitnik S., Žitnik M., Zupan B., and Bajec M. (2014). Sieve-Based Relation Extraction of Gene Regulatory Networks from Biological Literature, in *BMC Bioinformatics*, pp. 1-23. [IN PRESS]

Žitnik S., Šubelj L. and Bajec M. (2014). SkipCor: Skip-Mention Coreference Resolution using Linear-Chain Conditional Random Fields, in *PLoS One*, 9(6), pp. 1-14. □

Šubelj L., Žitnik S., et al. (2013). Node mixing and group structure of complex software networks, in *Advances in Complex Systems*, 17, 1450022, pp. 1-26. □

Jankovič M., Žitnik S., et al. (2013). Improvement of software development method with minimal involvement of developers, in *Uporabna Informatika*, 22(1), pp. 1-12. □

Šubelj L., Žitnik S., et al. (2013). Large real-world networks, in *Uporabna Informatika*, vol. 21, num. 2, pp. 107-119. □

Žitnik S., et al. (2013). General Context-Aware Data Matching and Merging Framework, in *Informatika*, vol. 24, num. 1, pp. 119-152. □

Zrnec A., et al. (2012). Podatkovne baze NOSQL, in *Uporabna informatika*, vol. 20, num. 3, pp. 164-172. □

### Peer Reviewed Conferences

Furlan B., Žitnik S., Nikolić B. and Bajec M. (2013). The Role of Semantic Similarity for Intelligent Question Routing, in *Proceedings of the International Scientific Conference on Informatics 2013*, Spišská Nová Ves, Slovakia, 5.-7. November 2013, pp. 1-6. □

Žitnik S. and Bajec M. (2013). Token- and constituent-based linear chain CRF with SVM for named entity recognition, in *Proceedings of the Fourth BioCreative Challenge Evaluation Workshop*, Washington DC, USA, 8 October 2013, vol. 2, pp. 144-151. □ **Achieved rank 7 among 27 participating teams in extracting chemical compounds from text.**

Pavkovič M., et al. (2013). Intelligent techniques for searching Internet forums, in *Zbornik dvaindvajsete mednarodne Elektrotehniške in računalniške konference ERK 2013*, Portorož, Slovenija, 16.-18. september 2013, pp. 85-88. □

Žitnik S., et al. (2013). Iterative end-to-end information extraction based on linear models, in *Zbornik dvaindvajsete mednarodne Elektrotehniške in računalniške konference ERK 2013*, Portorož, Slovenija, 16.-18. september 2013, pp. 47-50. □

Žitnik S., Žitnik M., Zupan B. and Bajec M. (2013). Extracting gene regulation networks using linear-chain conditional random fields and rules, in *BioNLP shared task 2013: ACL 2013 - Proceedings of the workshop*, Sofia, Bulgaria, 4.-9. August 2013, pp. 178-187. □ **First place in extracting relationships between genes and proteins.**

Lavbič D., Žitnik S., et al. (2012). Traversal and relations discovery among business entities and people using semantic web technologies and trust management, in *Databases and information systems VII : selected papers from the Tenth International Baltic Conference*, DB&IS 2012, pp. 164-174. □

Žitnik S., et al. (2012). Collective information extraction using first-order probabilistic models, in *BCI 2012 : proceedings*, Novi Sad, Serbia, 16.-19. September 2012, pp. 279-282. □

Žitnik S. (2012). Collective ontology-based information extraction using probabilistic graphical models, in *CAISE-DC-2012 : proceedings of CAiSE 2012 Doctoral Consortium*, Gdansk, Poland, June 26, 2012. □

Šubelj L., Žitnik S., et al. (2012). Lastnosti velikih realnih omrežij in primeri uporabe, in *Ustvarimo nove rešitve! : zbornik prispevkov*, 19. konferenca Dnevi slovenske informatike, Portorož, 16.-18. april 2012, pp. 1-10. □

Zrnec A., et al. (2012). Podatkovne baze NOSQL, in *Ustvarimo nove rešitve! : zbornik prispevkov*, 19. konferenca Dnevi slovenske informatike, Portorož, 16.-18. april 2012, pp. 1-10. □

Bajec M., et al. (2011). Supervizor+, in *Informatika v luči reforme javne uprave: zbornik konference Informatika v javni upravi*, 28.-29. november 2011, Kongresni center Brdo pri Kranju, pp. 1-6. □

Žitnik S., et al. (2010). Trendi v inteligentnem pridobivanju podatkov iz heterogenih virov, in *Zbornik Konference Informatika v Javni Upravi 2010*. □

Šubelj L., et al. (2010). Analiza kompleksnih omrežij: Osnovni pojmi in primeri uporabe v praksi, in *Zbornik Konference Informatika v Javni Upravi 2010*. □