

# Curriculum Vitae et Studiorum

## 1. Personal Data

Name	Weronika T. Adrian
Date and Place of Birth	14.01.1985, Kraków, Poland
Citizenship	Polish
Family Status	Married
Current Position (if applicable)	Research and Teaching Assistant (on a leave) at AGH University of Science and Technology, Kraków, Poland
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## 2. Degrees

Date	School/Institution/University, Degree, Grade
July 2017	University of Calabria; Doctor of Philosophy
June 2009	AGH University of Science and Technology in Kraków, Poland; Master of Science in Applied Computer Science; Grade: Excellent

## 3. Education

Period	Institution/University, Course
2014 – 2017	University of Calabria; PhD Studies in Mathematics and Computer Science
2011	Stanford Center for Professional Development, Stanford University; Science Management and Commercialization; a course designed for the “Top 500 Innovators” program
2010 – 2011	Dominican Studies of Philosophy and Theology
2004 – 2009	AGH University of Science and Technology in Kraków; MSc studies in Applied Computer Science
2000 – 2004	I Nowodworski High School in Cracow; math–science–computer science class profile
1992 – 2000	Comprehensive Primary Music School in Cracow; main instruments: piano and percussion

## 4. University Curriculum

**PhD thesis: “Ontology-driven Information Extraction”**  
supervised by Prof. Nicola Leone and Prof. Marco Manna

### Abstract:

Information Extraction consists in obtaining structured information from unstructured and semi-structured sources. Existing solutions use advanced methods from the field of Natural Language Processing and Artificial Intelligence, but they usually aim at solving sub-problems of IE, such as entity recognition, relation extraction or co-reference resolution. However, in practice, it is often necessary to build on the results of several tasks and arrange them in an intelligent way. Moreover, nowadays, Information Extraction faces new challenges related to the large-scale collections of documents in complex formats beyond plain text. An apparent limitation of existing works is the lack of uniform representation of the document analysis from multiple perspectives, such as semantic annotation of text, structural analysis of the document layout and processing of the integrated knowledge. The recent proposals of ontology-based Information Extraction do not fully exploit the possibilities of ontologies, using them only as a reference model for a single extraction method, such as semantic annotation, or for defining the target schema for the extraction process. In this thesis, we address the problem of Information Extraction from homogeneous collections of documents i.e., sets of files that share some common properties with respect to the content or layout. We observe that interleaving semantic and structural analysis can benefit the results of the IE process and propose an ontology-driven approach that integrates and extends existing solutions. The contributions of this thesis are of theoretical and practical nature. With respect to the first, we propose a model and a process of Semantic Information Extraction that integrates techniques from semantic annotation of text, document layout analysis, object-oriented modeling and rule-based reasoning. We adapt existing solutions to enable their integration under a common ontological view and advance the state-of-the-art in the field of semantic annotation and document layout analysis. In particular, we propose a novel method for automatic lexicon generation for semantic annotators, and an original approach to layout analysis, based on common labels identification and structure recognition. We design and implement a framework named KnowRex that realize the proposed methodology and integrates the elaborated solutions.

**MSc thesis: “Visual Rule Design Methods for Semantic Web Applications”**  
supervised by Prof. Grzegorz J. Nalepa

### Abstract:

The goal of the work presented in this thesis is to enable well-founded methodologies developed for rule-based systems to work for Semantic Web applications. In particular, this includes visual rule design methods developed within the HeKatE project. The aim of the research is to allow using of the XTT2 rule design framework for the Semantic Web. This would open up possibility to use the visual design tools for XTT2 for the design of the Semantic Web rules, as well as exploit the existing verification solutions. The primary goal of this thesis is to lay the foundations for an integration of the HeKatE methodology and the Semantic Web. The secondary goal is to consider translations of the rules, based on the concept of serialization, and thus allow for the rule interchange between HeKatE and the Semantic Web applications. In this thesis a proposal of a new inference scheme for the Semantic Web is formulated. A bridging theory and a transition proposal between Description Logics and Attributive Logic is presented in a form of a new rule language. The proposal is then evaluated and illustrated with an example. The approach based on the idea of knowledge serialization and rule interchange is discussed. Translators between different rule formats are presented, analyzed and evaluated.

## 5. Grants and Awards (if applicable)

Period/Date	Grant/Award
2014-2017	MIUR Scholarship for the PhD studies
2013	AGH UST research grant for young scientists
2013	AGH-UST Rector's Prize for Dydactic Achievements in 2012 for the organization of the Engineering of Intelligent Systems (EIS) program in computer science (Team Award)
2012	AGH UST research grant for young scientists
2011	AGH UST research grant for young scientists
2009	Best paper award at the ICCCI2009, together with Grzegorz J. Nalepa, for the paper Proposal of a New Rule-based Inference Scheme for the Semantic Web Applications, published in "New Challenges in Computational Collective Intelligence Series: Studies in Computational Intelligence", Vol. 244, Nguyen, Ngoc Thanh; Katarzyniak, Radoslaw; Janiak, Adam (Eds.), Springer, 2009.
2009	Distinction by Polish Information Processing Society in the XXVI Contest for The Best M.Sc. Thesis in Computer Science, for my MSc Thesis entitled Visual Rule Design Methods for Semantic Web Applications supervised by Grzegorz J. Nalepa

## 6. Professional Experience (if applicable)

Period	Employer, Job profile
2009 – 2017 (on a leave since 2014)	<b>research and teaching assistant</b> at Institute of Applied Computer Science, (previously: Computer Science Laboratory in Institute of Automatics), AGH University of Science and Technology in Kraków.
Jan 2013 – Jun 2013	<b>lecturer</b> at Institute of Philosophy, Jagiellonian University in Kraków; "Creativity Workshop" course for philosophy and cognitive science students
Jan 2013 – Mar 2013	<b>researcher</b> in Nitarch company; SPiN - Skuteczny Przedsiębiorca i Naukowiec program for fostering entrepreneurship among scientists
Jan 2011 – Jun 2011	<b>researcher</b> in Softhis company (introducing the Semantic Web concepts to the employees and analyzing the possibilities of integrating semantic technologies into the company system); Wiedza i Praktyka POKL programme for scientists-business cooperation (coordinated by MARR SA)
Oct 2009 – Sep 2010	<b>lecturer</b> at postgraduate studies at ZOD AGH in Mielec; it2edu POKL program preparing IT and engineering

	staff for teaching their professional subjects
Oct 2008 – Jun 2009	<b>research and teaching assistant intern</b> in Computer Science Laboratory in Institute of Automatics, AGH University of Science and Technology
Aug 2008 – Sep 2008	<b>Web developer, programmer</b> (php, mysql, ajax, js, html, css) in Team International (internship); HolidayCheck AG in Bottighofen, Switzerland
Sep 2006 – Jan 2008	<b>ICT and Computer Science teacher</b> at International School of Kraków
Sep 2006 – Jun 2007	<b>Network administrator</b> , International School of Kraków

## 7. Teaching Experience (if applicable)

List courses and the respective teaching role.

1. Intelligent Systems [EN] → teaching laboratory classes, 1<sup>st</sup> and 2<sup>nd</sup> year of Master studies in Computer Science (Unical)
2. Introduction to Unix/GNU/Linux [PL] → teaching laboratory classes, 1st year of undergraduate CS studies (AGH UST)
3. Algorithms and Data Structures [PL] → program preparation, teaching classes, 1st year of undergraduate CS studies (AGH UST)
4. Operating Systems [PL] → program preparation, teaching laboratory classes, 3rd year of undergraduate CS studies (AGH UST)
5. Knowledge Engineering Basics [PL] → teaching laboratory classes, 1st year of graduate CS studies (AGH UST)
6. Languages of Artificial Intelligence [PL] → teaching laboratory classes, 1st year of graduate Automatics and Robotics studies (AGH UST)
7. Semantic web Technologies [EN] → syllabus and program preparation, teaching laboratory classes, lecturing, 2nd year of graduate CS studies (AGH UST)
8. Creativity Workshop [PL] → syllabus and program preparation, teaching classes, 1st year of graduate CS studies (AGH UST)
9. Creativity Workshop [PL] → syllabus and program preparation, teaching classes and lecturing, philosophy and cognitive science studies (UJ)
10. Information Technology [PL] (Web Development, Databases, Office software and more) → syllabus and program preparation, teaching classes, lecturing, supervision of diploma theses, postgraduate studies (AGH UST)
11. Computer Science (Web Development, Programming in Java) [EN] → teaching classes, high school (International School of Kraków)
12. Information and Communication Technology [EN] → syllabus and program preparation, teaching classes, middle-school, primary school, preschool, nursery (International School of Kraków)

## 8. Participation in Projects (if applicable)

Period	Project	Contribution
2014 – 2017	“ <b>KnowRex</b> : Un sistema per il riconoscimento e l'estrazione di conoscenza”, POR Calabria FESR 2007-2013	Definition of the extended language of semantic descriptors, design and implementation of system Graphical User Interface, implementation tasks withing the project
2012 – 2015	“ <b>Prosecco</b> : Processes, Semantics and Collaboration for Companies”, NCBiR grant PBS1/B3/12/2012	Ontology engineering (knowledge acquisition, design and implementation of an ontology for SME (Small and Medium Enterprises)
2009 – 2015	“ <b>INDECT</b> : Intelligent information system supporting observation, searching and detection for security of citizens in urban environment”, EU FP7-218086	Collaborative knowledge engineering methods, technical support with prototype systems
2010 – 2012	“ <b>BIMLOQ</b> : Business Models Optimization for Quality”, MNiSW grant no. N516 422338	Collaborative knowledge engineering with semantic wikis
2007 – 2009	“ <b>HeKatE</b> : Hybrid Knowledge Engineering”, MniSW grant no. N516 024 32/2878	Semantic Web technologies, integrating Attributive Logic and Description Logics, integrating HeaRT rule engine with Pellet ontology reasoner

## 9. Other

### Job-related skills:

- experience in research work and other scientific activities
- experience in teaching on a university level, as well as K-12 level
- experience in mentoring students in their research work
- fluent communication in English, ability to present ideas
- ability to cooperate in a team, listen and build on others' ideas
- practical knowledge of creativity techniques for individual and team work

**Organisational / managerial skills:** I *co-founded* a Creativity and Innovation Lab Foundation (FLIK, <http://flik.org.pl>) in 2014 that was formed out of an informal group called "Creative Cracow", established in 2012, of which I was a *leader*. The foundation focuses on promoting creativity and entrepreneurship in Poland by organizing open events, workshops and projects based on Design Thinking methodology. We engaged in local startup community and brought to Kraków inspirations from Silicon Valley and lessons learned at Stanford University

**Communication skills:** I was a *speaker* at TEDxWarsawPresidentialPalace in 2014. I was also a *panelist* at the VIII Civic Congress held by Polish think-tank Kongres Obywatelski, where I was talking about ways of modernization of Poland.

**Memberships:**

- Member of "Top 500 Innovators" Association
- Founder member of Polish AI Society
- Former member of IEEE

**Other skills and experience:** I served as an *organizer, speaker, mentor or trainer* at several innovation and entrepreneurship-related projects, including "MakerSpace Kraków" (2013), "MediaLab of Social Innovations" (2013), Polish American Innovation Bridge (2013, 2016, 2017), Design Thinking Week Poland (2014, 2017).