

# Aleksandar Kartelj

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## EXPERIENCE

### Faculty of Mathematics, University of Belgrade

SEPTEMBER 2015 - PRESENT

#### Assistant Professor

Teaching several computer science courses on undergraduate and graduate level: Object oriented programming, Computer organization, Computer architecture, Operating systems and Computer networks.

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### Mathematical Grammar School

JANUARY 2014 - JULY 2016

#### Computer Science Teacher

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### Computer Science Gymnasium

SEPTEMBER 2015 - PRESENT

#### Computer Science Teacher

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### Faculty of Mathematics, University of Belgrade

OCTOBER 2008 - SEPTEMBER 2015

#### Teaching assistant

## EDUCATION

### Faculty of Mathematics, University of Belgrade

2010 - 2014

#### Doctor of Philosophy (PhD), Computer Science,

Grade: 10.00 (out of 10.00)

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### Faculty of Mathematics, University of Belgrade

2008 - 2010

#### Master of Science (MSc), Computer Science,

Grade: 9.92 (out of 10)

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### Faculty of Mathematics, University of Belgrade

2005 - 2008

#### Bachelor of Science (BSc), Computer Science,

Grade: 9.94 (out of 10)

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### Faculty of Economics, University of Belgrade

2010 - PRESENT

Finished all exams, work on thesis still in progress.

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PROJECTS

**CeSID, RECO, software for automated recognition and analysis of paper inquiries**

2007 to 2008

Designed and implemented software that automatically recognizes hand-written information from paper inquiries.

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**CeSID, Software for monitoring and analysis of Serbian 2007 and 2008 Elections**

2007 to 2008

Designed and implemented software for monitoring and analysis of parliamentary and presidential elections in Serbia. Software is consisted of several modules, including call center application, monitoring dashboards and algorithmic sampling modules for making representative samples.

State of the art sampling methodology was adopted and improved for the sake of having precise election results estimations. This includes sample testing against previous election results, stratification in order to obtain higher representability and use of weighted stratified results during the election day for the sake of having immediate results.

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**CeSID, Centralized database with information about local government authorities**

2008 to 2009

Designed and implemented web application that allows Internet users to see information about local government authorities for all municipalities in Serbia. Information were updated by a network of authorized users, mostly local government officers.

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**eMunicipality - Electronic government system**

2008 to 2010

Architecturing and designing informational system "eMunicipality" that fully supports work of municipality appeal procedure, advanced reports, local taxes, investment and estate, tender procedures, human resources, portal and other services. System is implemented for municipality of Bar and it works in Bar, Montenegro. System is presented at XV Scientific conference Informational technologies – Today and tomorrow IT 2010. In december 2010, Union of municipalities of Montenegro awards this system as Best Practice in the area of the "Introduction of the IT in Service Provision Process".

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**Ministry of Human and Minorities rights and CeSID, Full logistic support for elections of National counsels of national minorities**

2009 to 2010

Designed and implemented full software infrastructure for monitoring and analysis of elections for National counsel of national minorities. This included: modules for registration of national counsels election candidates, central registry of national

minorities, modules for generating election electronic resources, modules for monitoring of voting process, etc.

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### **CeSID, Software for monitoring and analysis of Serbian 2012 Elections**

2012

Improved previously proposed solution for monitoring and analysis of elections. New software was enriched with online charts representing results directly as they are being entered in the call center application.

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### **Blic news portal and CeSID, Pre-elective compass, online application**

2012

Online application that estimates political opinion based on the set of questions that user answers. The underlying model uses cluster analysis in order to assign the most similar political party.

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### **Direct Media agency and CeSID, Media Mix Optimizer, software package**

2012

Designed and implemented optimization methodology and software for determination of best media management portfolio. Algorithm uses CeSID market research results as an input, and then optimizes media allocation for a selected target group.

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### **CeSID, SPAS, Statistical Analysis and Processing Software**

2013

Designed and implemented software that is lightweight version of SPSS.

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### **E-learning Web Portal učenjenadaljinu.com**

APRIL 2014 TO APRIL 2016

Web application for online education. It contains high number of video resources, digital lectures and also an option to speak with teacher directly through video conference module in real time.

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### **Project 174010 - Mathematical Models and Optimization Methods for Large-Scale Systems**

OCTOBER 2010 - PRESENT

The main goal of research in this scientific project is consideration of real-world large scale systems that needs to be improved using mathematics and optimization methods. Such large scale systems appear in industry, telecommunication, transportation, medicine, electronics, education, chemistry, in public and private sector, etc. More detailed information can be found on <http://www.mi.sanu.ac.rs/projects/174010e.htm>.

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### **CeSID, software for monitoring and analysis of Serbian 2016 Elections**

2016

Previously used software and stratified sampling methodology was adopted. Some additional modifications of software enabled real-time monitoring and analysis for the first time in Serbian elections history.

LANGUAGES

**English (Full professional proficiency) , German (Elementary proficiency)**

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## SKILLS

### **Scientific skills and areas of interest:**

Data mining and machine learning (classification, cluster analysis, dimensionality reductions), Statistical analysis, Exact optimization, Metaheuristic optimization, etc. Author of more than 10 papers in regards to mentioned scientific areas. More details on scientific efforts can be found on

<http://www.math.rs/~kartelj> and <http://www.math.rs/~vladaf/science-group-index-en.html>.

### **Programming skills:**

C, LaTeX, C#, MySQL, Quantitative Finance, Java, Algorithms, C++, Matlab, Python, PHP, Web Development, Programming, Software Engineering, Microsoft Office, Scheme, SQL, Computer Science, Software Development, Visual Studio, OOP, Machine Learning, Subversion, Perl, UML, Linux, Data Mining, Eclipse, etc.

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