

Nikola MILOŠEVIĆ

(1986, Slovakia)

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SUMMARY

Highly motivated, resourceful, result driven Ph.D. researcher in natural language processing, text mining and machine learning with 4 years of professional experience in software development. Adaptable to a wide range of programming languages and methodologies.

RESEARCH INTERESTS

- Text mining, text analytics, natural language processing, information extraction from semi-structured data
- Machine learning
- Data mining and data analytics
- Computer security

WORK EXPERIENCE

- July 2017 – present **Research Associate (Data scientist)**
University of Manchester, School of Computer Science
Project: KNOWMAK – Horizon 2020 EU project. Discovering, mapping and making database of social innovation projects and participants in European Economic Area using web crawling, text mining and machine learning techniques. Creating European Social Innovation Database (ESID). Technologies used: Python, MongoDB, MySQL, NLTK.
- January 2014 – September 2017 **PhD student and teaching assistant**
University of Manchester, School of Computer Science
PhD project: “Table mining and data curation from biomedical literature”
Project is supervised by Dr Goran Nenadic and Rob Hernandez (AstraZeneca). Member of text mining and natural language processing research group. *Technologies used:* Java, Python, MySQL, OpenNLP, Apache Lucene, NLTK
Teaching experience: Data Engineering, Data Modelling on the Web, Operating Systems, Distributed Systems, Fundamentals of Databases, Natural Language Systems, First year project (Linux, Windows, LaTeX, PHP, MySQL). Teaching experience included supervision of students in the lab and marking their assignments. Supervised one master and one third year project.
- November 1st 2012 – January 2014 **Software developer**
Devana Technologies (Acquired by GoDaddy in 2016)
Development of natural language processing engine that utilizes blog, social media mining, sentiment analysis and information retrieval (implemented using MongoDB, Python, Flask and Scrapy). Responsible for the development of ManageWP and Income.io Android applications. Development and maintenance of ManageWP.com (HTML/CSS, JavaScript, PHP, MySQL, WordPress). Leading white hat security program and responsible for application security of ManageWP.com and MangeWP.org.
- December 1st 2010 - 1st September 2012 **Software developer**
P3 Communications GmbH
Software development on V-tools control centre (application for remote monitoring and control of mobile network measurement clients used by P3 drive test division implemented in Delphi), Rhode und Schwarz ROMES file converter (C++, JAVA, Delphi), Vodafone Mobile Connect Card Remote Access Test (Delphi, Win 32) high performance measurement system with live KPI evaluation. It enables measurement on Application and Transport layers, for different services: DNS, ICMP, FTP, HTTP.
- March 15th 2008 to April 30th 2009 **Software test engineer - intern**
Pexim Solutions (Asseco South Eastern Europe)
Working with Microsoft technologies (.NET, C#, WPF, WCF, Microsoft SQL Server, Enterprise Library, Windows Communication Foundation). Automated testing of Pexim Revolution platform and web services for banks, developed testing tools, performance measurement tools, and report generators

EDUCATION

- From 2014 – 2018 **PhD in Computer Science**
Text mining and natural language processing research group
School of Computer Science, University of Manchester, United Kingdom
PhD thesis: “Table mining and data curation from biomedical literature”
Thesis synopsis: The scientific literature contains a large amount of important information about the settings and findings of the experiments in tables. Text mining methodologies usually ignore tables. The aim of this project was to extract and curate information of interest from tables in biomedical literature. The methodology disentangles tables into computationally processable form, labelling functional areas of the table (headers, stubs, super-rows and data). It also finds functional relationships between the cells. Tables are classified by the information they contain in order to narrow

search space for information extraction. Inter-cell relationships and functional structure of the table is used by rule creation engine for crafting information extraction rules.

Research fields: Natural language processing, machine learning, text mining

- From 2011 - 2013 **Master of Science in Computer Science - GPA 9 (max 10)**
Department of Computer Science
School of Electrical Engineering, University of Belgrade, Serbia
Master thesis: Sentiment analysis of sentences in Serbian language using Naive Bayes algorithm
- From 2006 - 2010 **Bachelor of Science (Dipl. Ing. Computer Science) - GPA 8,04 (max 10)**
Department of computer science
School of Electrical Engineering, University of Belgrade, Serbia
Bachelor thesis: Template based test export from TestBase application to MS Word
Experienced a broad variety of programming languages and technologies, including C/C++, Java, JSP, Assembler

AWARDS AND PRIZES

- 2018 Best paper award at *23rd International Conference on Natural Language & Information Systems (NLDB2018)* for paper titled "Classification of Intangible Social Innovation Concepts" by Milosevic N., Gok A., Nenadic G.
- 2013 First place in first "**Belgrade Startup Weekend**" organized by HRH Crown Prince Alexander Karađorđević's Foundation for Education and Culture Culture with project BrandCheck – service that enables insight in the sentiment and demographics of customers using social network mining and sentiment analysis
- 2011 Second place on competition "**iSEC Cyber Security iPuzzle**" organized by Belgrade Security Fair. Competitors had to find security flaws on web sites

PUBLICATIONS

- **Milosevic N.**, Gok A., Nenadic G., *Classification of Intangible Social Innovation Concepts*, 23rd International Conference on Natural Language & Information Systems, 13-15 June 2018, Paris, Springer, Cham, 2018. DOI: 10.1007/978-3-319-91947-8_42, ISBN: 978-3-319-91946-1
- Belousov M., **Milosevic N.**, Dixon W., Nenadic G., *Extracting adverse drug reactions and their context using sequence labelling ensembles in TAC2017*, Text Analytics Conference, 13-14. November. 2017., National Institute of Standards and Technology Gaithersburg, Maryland, USA
- **Milosevic, N.**, Dehghantaha, A., Choo, K.K.R (July 2017). *Machine learning aided Android malware classification*. International journal of Computers and Electrical Engineering, Elsevier. DOI: 10.1016/j.compeleceng.2017.02.013
- Chen P., Ponočko J., **Milošević N.**, Nenadić G and Milanovic J. (November 2016). *Towards applications of text mining for enhanced power network data analytics – part I: retrieval and ranking of textual data from the internet*. In 10th Mediterranean Conference on Power Generation, Transmission, Distribution and Energy Conversion
- Chen Y., Ponočko J., **Milošević N.**, Nenadić G and Milanovic J. (November 2016). *Towards applications of text mining for enhanced power network data analytics – part II: offline analysis of textual data*. In 10th Mediterranean Conference on Power Generation, Transmission, Distribution and Energy Conversion
- **Milosevic, N.**, Gregson, C., Hernandez, R., & Nenadic, G. (2016, June). *Hybrid methodology for information extraction from tables in the biomedical literature*. In Belgrade Bioinformatics conference (pp. 73-78). University of Belgrade
- **Milosevic, N.**, Gregson, C., Hernandez, R., & Nenadic, G. (2016, June). *Disentangling the Structure of Tables in Scientific Literature*. In International Conference on Applications of Natural Language to Information Systems (NLDB2016 pp. 162-174). Springer International Publishing. DOI: 10.1007/978-3-319-41754-7_14
- **Milosevic N.**, Gregson C., Hernandez R. and Nenadic G. (2016). *Extracting Patient Data from Tables in Clinical Literature - Case Study on Extraction of BMI, Weight and Number of Patients*. In Proceedings of the 9th International Joint Conference on Biomedical Engineering Systems and Technologies, ISBN 978-989-758-170-0, pages 223-228. DOI: 10.5220/0005660102230228
- **Milosevic, N.**, & Nenadic, G. (2016). *As Cool as a Cucumber: Towards a Corpus of Contemporary Similes in Serbian*. arXiv preprint arXiv:1605.06319.
- **Milosevic, N.** (2016). *Equity forecast: Predicting long term stock price movement using machine learning*. arXiv preprint arXiv:1603.00751.
- **Milosevic, N.** (2016). *Marvin: Semantic annotation using multiple knowledge sources*. arXiv preprint arXiv:1602.00515.
- **Milosevic, N.** (2013). *History of malware*. arXiv preprint arXiv:1302.5392.
- **Milošević, N.** (2012). *Stemmer for Serbian language*. arXiv preprint arXiv:1209.4471.

For more details, please see Google scholar profile at: <https://scholar.google.com/citations?user=VvZWelsAAAAJ&hl=sr>

CONFERENCE AND POSTER PRESENTATIONS

- **Milosevic, N.**, Gupta, A., Chen, A., DeMarco, S., Le, J., Schneider, J., Ning, Y., Nenadić, G., Boyce, R.; *Extraction of Drug-Drug Interactions from Drug Product Labeling Tables*; Collaborative poster presentation with Pittsburgh University; presented at American Medical Informatics Association Joint Summit 2017., San Francisco, CA, USA

- **Milosevic, N.,** Gregson, C., Hernandez, R., & Nenadic, G. (2016, June). *Disentangling the Structure of Tables in Scientific Literature*. In International Conference on Applications of Natural Language to Information Systems (NLDB2016 pp. 162-174). Springer International Publishing. DOI: 10.1007/978-3-319-41754-7_14
- **Milosevic, N.,** *Machine Learning Prediction of Financial Markets*, Oral presentation (invited speaker) given at Machine learning techniques, organized by technicalanalyst.co.uk, November 2016.
- **Milosevic, N.,** Gregson, C., Hernandez, R., & Nenadic, G. *Hybrid methodology for information extraction from tables in the biomedical literature*. Oral presentation given at the Belgrade Bioinformatics conference, June 2016, Belgrade Serbia
- **Milosevic N.,** Gregson C., Hernandez R. and Nenadic G. (2016). *Extracting Patient Data from Tables in Clinical Literature - Case Study on Extraction of BMI, Weight and Number of Patients*. Oral presentation given at the 9th International Joint Conference on Biomedical Engineering Systems and Technologies; February 2016, Rome, Italy
- **Milosevic N.,** Gregson C., Hernandez R. and Nenadic G. *Supporting clinical trial data curation and integration with table mining*. Oral presentation given at FARR institute international conference on Data intensive Health Research and Care, August 2015, St. Andrews, UK
- **Milosevic N.,** Gregson C., Hernandez R. and Nenadic G. *Supporting Clinical Trial data curation from literature using table mining*. Poster presented at the Postgraduate Summer Research Showcase at the University of Manchester, June 2015., Manchester, UK

PROFESSIONAL MEMBERSHIPS

- Association for Computational Linguistics, Special Interest group for Slavic Languages
- Healtex: UK Healthcare Text Analytics Research Network
- Open Web Application Security Project

TRAINING, COURSES AND EDUCATIONAL EVENTS

- May 2018. **Structural equation modelling with Mplus training**
Organized by Cathie Marsh Institute for Social Research, The University of Manchester
- June 2017. **10th GATE (General Architecture for Text Engineering) Training Course**
Organized by University of Sheffield
- November 2016. **GreatUniHack with project Schumann**
Organized by HackSoc at the University of Manchester
- September 2016. **BLAHmuc – Biomedical Linked Annotation Hackathon**
Organized by Technical University Munich, Germany
- November 2015. **BLAH2 – Biomedical Linked Annotation Hackathon**
Organized by DBCLS in Mishima and Ito, Japan
- July 2015. **LxMLS – Lisbon Machine Learning Summer School**
Organized by Instituto Superior Técnico
- May 2015. **GreatUniHack with project eCitizen**
Organized by HackSoc at the University of Manchester
- May 2014 **Academic Writing**
Organized by University of Manchester professional development
- April 2014. **Microsoft Azure for Research**
Organized by Microsoft research and University of Manchester IT Services
- March 2014 **Starting a Business**
Organized by University of Manchester professional development
- March - May 2012 **Online course on natural language processing (prof Dan Jurafsky, prof Christopher Manning)**
Coursera.org and Stanford University
Completed – 82,2%
- March - June 2012 **Online course on cryptography (prof Dan Boneh)**
Coursera.org and Stanford University
Completed – 99,9%
- October 2011 **European project proposal writing**
Balkan security network
- October 2010 **Check Point Security Administration R70/R71**
S&T Slovenija d.d.
- 2009 **Training on social organization and public speaking**
Centre for development of non-formal education, Serbia on the move
- 2009 **Trainings on copyright and marketing**
Business technology incubator of technical faculties in Belgrade

PROJECTS

- 2016 Schumann – Software that composes music using recurrent neural networks given start of the song (<https://github.com/mbelousov/schumann>)
- 2016 Marvin – semantic text annotator that can use multiple knowledge sources, such as UMLS, DBPedia and vocabularies in Simple Knowledge Organisation System for annotation (<https://github.com/nikolamilosevic86/Marvin>)
- 2013 Project leader on OWASP SeraphimDroid. OWASP SeraphimDroid is educational application for android devices that helps users learn about risks and threats coming from other installed android applications: (https://www.owasp.org/index.php/OWASP_SeraphimDroid_Project)

For more projects visit: <https://github.com/nikolamilosevic86>

OTHER

Languages

- English (fluent, TOEFL)
- Serbian (native)
- Slovak (native)
- Czech (fluent)
- French (basic comprehension level)

Positions of responsibility

- January 2017 – 2018 President of University of Manchester ex-Yugoslav society
- May 2016 – September 2016 Google Summer of Code mentor in front of OWASP for OWASP SeraphimDroid project
- September 2015 – 2017 MUTIS (Manchester University Trading and Investment Society) Head of Technology
- September 2015 – September 2016 Rotaract Manchester International Publication Officer
- May 2015 – September 2015 OWASP Summer Code Sprint mentor for OWASP SeraphimDroid project
- March 2015 – present OWASP (Open Web Application Security Project) Manchester local chapter leader
- May 2014 – September 2014 Google Summer of Code mentor in front of OWASP for OWASP SeraphimDroid project
- February 2012 – January 2014 OWASP (Open Web Application Security Project) Serbia local chapter leader
- 2008-2011 Author of a web site about Slavic mythology <http://www.starisloveni.com> and filmed two 45 minute documentaries about Slavic pre-Christian history and mythology which was distributed for TV stations in Serbia (2010-2015)