

Zeljko Obrenovic

Curriculum Vitae

Contact

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Highlights

- I am a **Principal Consultant** and **the head of the software measurement** at [Software Improvements Group \(SIG\)](#).
- I am leading the development of tools and models for studying quality of software systems, including **maintainability, security, usability, performance** and **reliability**.
- I am actively involved in **consultancy**, connecting results of low-level technical analyses to higher-level management issues, risks and costs.
- I have a **PhD in Computer Science**, and strong **international reputation** and visibility in the software and interaction design communities.
- My **emphasis is on design**: I build experimental systems to explore new domains. I also aim at [bridging design research and practice](#), trying to get best of both worlds.
- I **write regularly** [about software and interaction design](#).
- I actively **promote good software development practices** (e.g. see my recent [O'Reilly webcast](#) and [training videos](#) on building maintainable software).
- I have **17 years** of professional experience. I am an **experienced software designer**, and the developer behind three innovative projects:
 - the rapid-prototyping middleware AMICO (<http://amico.sourceforge.net>)
 - the software design tool Sketchify (<http://sketchify.sourceforge.net>)
 - Sketchlet (<http://sketchlet.sourceforge.net>)
- Before joining SIG I worked as:
 - a consultant and technology evangelist at [Backbase](#)
 - an assistant professor at the [Technical University in Eindhoven](#) (TU/e)
 - a researcher at [CWI](#) in Amsterdam
 - a software designer at various industrial and government projects

Professional Experience

Current position:

June 2015 –

**Principal Consultant - Software Measurement and Analysis (full time),
Software Improvement Group (<http://www.sig.eu>), Amsterdam**

- *Leading the software measurement and analysis group*
- *Innovation of the SIG measurement models based on the ISO 25010 standard (maintainability, security, performance reliability, usability)*
- *Development of new tools for software measurements*
- *Consultancy on client projects in both public and private sector*

Jan 2013 –
June 2015

**Senior Technical Consultant (full time),
Software Improvement Group (<http://www.sig.eu>), Amsterdam**

- *Consultancy on 30+ client projects in both public and private sector*
- *Development of interactive tools for exploration of source code*
- *Development of interactive visualization techniques*
- *Development of the SIG usability model*

(DHL, KPN, T-Mobile, Vodafone, Ziggo, Voogd & Voogd, Mendix, Outsystems, ABN Amro, BTPN (Indonesie), TIE Kinetix, ICTU, Jeugdzorg, Vluchtelingenwerk Nederland, Rijkswaterstaat, Woningnet, ProRail, Trans Link System (TLS), CNV, Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, Gemeente Utrecht, Rechtspraak, Belastingdienst, Eneco, Domstolsstyrelsen, Vlaamse Overheid, Nederlandse Loterij Organisatie, CIBG, DUO, FieldComm Consortium, ABB, CodeWriters, Emerson, Sogeti, Capgemini, Exact, Mirabeu, Havenbedrijf Rotterdam, NPM Capital, Iddink, Morpho / Safran, Nationale Nederlanden, BMW Alphabet, Sofico, Dileoz, Acerta)

Past positions:

2012 – 2013

**Tech Evangelist (Patterns & Practices, full time),
Patterns & Practices Department, Backbase, Amsterdam**

- *Collecting and sharing best software development and software architecture practices related to the Backbase user experience management platform*
- *Research and development of novel interactive systems*
- *Teaching, maintaining connections with academia*

2008 – 2012

**Assistant Professor (full time), User Centered Engineering (UCE),
Faculty of Industrial Design, Eindhoven University of Technology**

- *Research in the domain of design of interactive systems,*
- *Development of novel interactive systems*
- *Teaching undergraduate and master courses*
- *A proposer and project secretaries for the IOP-IPCR project REPAR (<http://repar-project.org/>)*

2006 - 2008

**Researcher (full time), Semantic Media Interfaces,
Centre for Mathematics and Computer Sciences (CWI), Amsterdam**

- *Design of novel interactive systems,*
- *Exploring semantic media and software development topics,*
- *Participation in two international projects*
- *The ITEA Passepartout project (itea3.org/project/passepartout.html)*
- *K-SPACE Network of Excellence.*

1999 - 2005

System Engineer (full time),

The Center for Command Information Systems, Belgrade, Serbia.

- *Development of information systems, design of interactive systems,*
- *Exploring various software development topics,*
- *Supervising various projects, teaching and education.*

Education

2004

Ph.D. in Computer Science, School of Electrical Engineering, University of Belgrade, Belgrade, Serbia and Montenegro.

2002

M.S. in Computer Science, School of Electrical Engineering, University of Belgrade, Belgrade. GPA: 10.00/10.00.

1999

B.S. in Computer Science, Military Technical Academy, University of Belgrade, Belgrade.

Software Development Skills

- Highly experienced in Java, JavaScript, HTML(5), CSS, SVG, SQL, XML.
- Previous experience in C/C++, Antlr, VBScript, ASP(X), JSP, Visual Basic. Also (in the dawn of education) C#, Python, Ruby, PHP, AspectJ, Lisp, Fortran, Assembler. Long time ago I also used to program in Clipper and Pascal.
- UML modelling techniques.
- Key libraries and frameworks: Spring Framework, AngularJS, D3, Apache Commons
- Databases: MySQL, MongoDB, earlier SQL Server, Oracle Database
- Development tools: IntelliJ, Eclipse, Git, SVN, Jenkins, Go, Jira
- Other experiences: Micro Service Architecture (MSA), REST, Domain Driven Design (DDD), Security, SSO, OAuth2.
- Experimental platforms, libraries and tools: VRML, X3D, OpenGL, Java3D, GeoVRML, H-ANIM
Speech technologies: Sphinx, FreeTTS, Microsoft Speech API, Java Speech
Computer vision: Intel Open Computer Vision (OpenCV) library
Web technologies: XML, CSS, HTML
Ontologies: RDF, RDFS, OIL, DAML, OWL, Ontology tools: Protégé
CASE tools: Rational Rose, ArgoUML, ERwin
Databases: SQL Server, MS Access, My SQL, Oracle
Commonsense reasoning: ConceptNet, Agents: IBM Aglets, Voyager
Mobile computing: Java 2 Micro Edition (J2ME), Kannel WAP and gateway

Open-Source Projects Activities

The main developer and administrator for several open source systems:

- Sketchlet (<http://sketchlet.sourceforge.net/>)
- Sketchify (<http://sketchify.sourceforge.net/>)
- AMICO (<http://amico.sourceforge.net>)

Teaching Experience

I have more than 10 years of teaching experience in different roles and positions.

Professional educations:

- Author and presenter of O'Reilly Training Videos on Building Maintainable Software (±4hours)
- Co-author of the O'Reilly Webcast [Building maintainable software for sustainable business growth: 8 best practices](#)

2016-2017 Technical University in Eindhoven (TU/e):

Post-MSc [User System Interaction \(USI\)](#):

- [Data Analytics](#): Creating Business Value with Data and Analytics, main lecturer

2008-2012, Technical University in Eindhoven (TU/e):

Undergraduate courses:

- Main lecturer for the course [Sketching Interactive Systems](#) Industrial Design, TU/e
- [Coaching](#) individual students and projects at the bachelor level.

Master courses:

- Main lecturer for the course [Multi-Modal Interaction](#) Industrial Design, TU/e
- [Coaching](#) individual students and projects at the master level

PhD students (daily supervisor)

2006/2007, Amsterdam:

- Intelligent Multimedia Technology ([Fall 2006, Fall 2007](#)) - Main Lecturer, Vrije Universiteit Amsterdam
- Multimedia Authoring ([Spring 2006](#)) - Main Lecturer, Vrije Universiteit Amsterdam

2000-2005, University of Belgrade:

- Human-Computer Interaction (Spring 2005, Spring 2004) – Main Lecturer, Computer Science Department, Military Technical Academy, University of Belgrade, Serbia and Montenegro
- Object-Oriented Programming (Fall 2004, Fall 2003, Fall 2002) - Main Lecturer, Computer Science Department, Military Technical Academy, University of Belgrade, Serbia and Montenegro
- Multimedia Information Systems (Spring 2001, Spring 2000) - Teaching assistant, School of Business Administration, University of Belgrade, with Prof. Dusan Starcevic
- Computer Graphics (Spring 2000) - Teaching assistant, College of Electrical Engineering, University of Belgrade, with Prof. Dusan Starcevic

Visiting professor:

- [Digital World Research Centre](#), University of Surrey, Guilford, UK (February 2010)
- [Laboratory of HCI for Special Needs](#), University of the Basque Country, San Sebastian, Spain (September 2004)

Professional Community Activities

Board Member

- IEEE Software Advisory Board (2015-)

Editor

- Guest Editor: Special Issue of ACM Multimedia Systems Journal on Canonical processes of Media Production (2008)

Journal Reviewer

- Computer
- Interacting with Computer
- ACM/Springer Multimedia Systems Journal
- IEEE Software
- IEEE Multimedia
- IEEE Intelligent Systems
- IEEE Transactions on Knowledge and Data Engineering
- IEEE Transactions on Systems, Man, and Cybernetics
- IEEE Transactions on Cybernetics
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Visualization and Computer Graphics
- Journal of Systems and Software
- Science of Computer Programming
- Software: Practice & Experience
- Data & Knowledge Engineering (DKE)
- Journal of the Audio Engineering Society
- Computing in Science and Engineering

Program Committee Member and/or Reviewer

- ACM CHI
- Engineering Interactive Computing Systems - EICS
- ACM Multimedia
- ACM Conference on Interactive Tabletops and Surfaces
- International Conference on Intelligent User Interfaces - IUI
- International Cross-Disciplinary Conference on Web Accessibility - W4A
- International Workshop on Semantic-enhanced Multimedia Presentation Systems
- International Workshop on Task, Models and Diagrams for UI Design - TAMODIA

- IFIP Conference on Artificial Intelligence Applications & Innovations - AIAI
- Conference on Articulated Motion and Deformable Objects

Honors and Grants

- October 2012 – Awarded the ACM Senior Grade (ACM award given to individuals who "*demonstrated performance that sets them apart from their peers through technical leadership, and technical or professional contributions.*")
- June 2006 - Recognized as a multimodal interface "guru" by SIMILAR, European Network of Excellence dedicated to multimodal interfaces.
- January 2000 – January 2002 – M.S. scholarship grant (first in rank) from The Ministry of Science, Research, and Technology, The Government of Serbia

Standardization: W3C activities

- Member of the W3C Multimedia Semantics Incubator Group

Interviews

- Book *SIMILAR Dreams, Multimodal Interfaces in Our Future Life*, UCL Presses Universitaires de Louvain, July 2005, ISBN: 2-930344-91-1, pp. 306-311

Professional Memberships

- ACM (Senior Member)
- IEEE Computer Society
- The Royal Institute of Philosophy
- International Association of Software Architects (IASA)
- System Architecture Study Group (SASG)

Languages

- **English, Dutch:** fluent
- **Serbian, Croatian:** native

Personal interests

- Athletics
- Philosophy

Published papers

Books

1. **Z. Obrenovic**, *Research and Practice: Essays of a Researcher-Practitioner*, LeanPub 2017.
2. **Z. Obrenovic**, *Human-Computer Interaction*, FON: TEMPUS, Belgrade, 2004, ISBN 86-7680-027-8, (in Serbian, adapted PhD Thesis).

International journal papers

1. **Z. Obrenovic**, "Insights from the Past: The IEEE Software History Experiment", *IEEE Software*, vol. 34, No. 7, (Jul/Aug 2017), pp. 71-78.
2. **Z. Obrenovic**, "Research and Practice: The Curious Case of 'Small' Researchers-Practitioners", *Communications of the ACM*, vol. 56, No. 9, (Sept 2013), pp. 38-40.
3. **Z. Obrenovic**, "The Hawthorne Studies and Their Relevance to HCI Research", *ACM interactions* 21, 6 (Nov-Dec 2014), pp. 46-51.
4. **Z. Obrenovic**, "Design as a Political Activity: Borrowing From Classical Political Theories", *ACM interactions* 22, 6 (Nov-Dec 2015), pp. 42-45.
5. **Z. Obrenovic**, "Doing research in practice: some lessons learned". *ACM Crossroads*, 20, 4 (June 2014), 15-17.
6. **Z. Obrenovic**, "The four points of the HCI research compass". *ACM interactions* 20, 3 (May 2013), 34-37. **Z. Obrenovic**, "Software Sketchifying – Bringing Innovation into Software Development", *IEEE Software*, vol. 30, no. 3 (March 2013), pp. 80-86.
7. **Z. Obrenovic**, Bart den Haak, "Integrating End-User Customization and Authentication: The Identity Crisis", *IEEE Security and Privacy*, Spetember/October 2012, Vol. 10, No. 5, pp. 82-85.
8. **Z. Obrenovic**, J.B. Martens, "Sketching Interactive Systems with Sketchify", *ACM Transactions on Computer Human Interaction (ToCHI)*, Vol. 18, no. 1, March 2011. (Also presented at the ACM CHI 2011 conference)
9. **Z. Obrenovic**, D. Gašević, "End-User Service Computing: Spreadsheets as a Service Composition Tool", *IEEE Transactions on Services Computing*, vol. 1, no. 4, pp. 229-242, October-December, 2008.
10. **Z. Obrenovic**, J. Abascal, D. Starcevic, "Universal Accessibility as a Multimodal Design Issue", *Communications of the ACM*, Vol. 50, No. 5, May 2007, pp. 83-88.
11. **Zeljko Obrenovic**, Dušan Starcevic, Bran Selic, "A Model Driven Approach to Content Repurposing", *IEEE Multimedia*, Vol. 11, No. 1, January-March 2004, pp. 62-71.

12. **Z. Obrenovic**, D. Starcevic, "Modelling Multimodal Human-Computer Interaction", *IEEE Computer*, Vol. 37, No. 9, September 2004, pp. 65-72.
13. **Z. Obrenovic**, "Rethinking HCI education: teaching interactive computing concepts based on the experiential learning paradigm". *ACM interactions* 19, 3 (May 2012), 66-70.
14. **Z. Obrenovic**, "Design-Based Research: What We Learn When We Engage In Design Of Interactive Systems". *ACM interactions* 18, 5 (September 2011), 56-59.
15. **Zeljko Obrenovic**, Dragan Gasevic, Anton Eliens, "Stimulating Creativity Through Opportunistic Software Development", *IEEE Software*, Vol. 25, No. 6, Nov/Dec, 2008, pp. 64-70.
16. **Zeljko Obrenovic**, Dragan Gasevic, "Open-Source Software: All you do is put it together", *IEEE Software*, Vol. 24, No. 5, Sept/Oct, 2007, pp. 86-95.
17. **Zeljko Obrenovic**, Dragan Gasevic, "Mashing Up Oil and Water: Combining Heterogeneous Services for Diverse Users," *IEEE Internet Computing*, vol. 13, no. 6, pp. 56-64, November/December, 2009.
18. Lynda Hardman, **Zeljko Obrenovic**, Frank Nack, Brigitte Kerhervé, Kurt Piersol "Canonical processes of semantically annotated media production", *ACM Multimedia Systems Journal*, Volume 14, Number 6 / December, 2008, pp. 327-340.
19. **Zeljko Obrenovic**, "Web Accessibility and Open Source Software", *Disability & Rehabilitation: Assistive Technology* 2009, Vol. 4, No. 4, Pages 227-235.
20. **Z. Obrenovic**, Dušan Starcevic, "Adapting the Unified Software Development Process for User Interface Development", *Computer Science and Information Systems*, Volume 03, Issue 01 (June 2006), pp. 33-52.
21. M. Jovanovic, D. Starcevic, **Z. Obrenovic**, "Designing Aircraft Cockpit Displays: Borrowing from Multimodal User Interfaces", *Transactions on Computational Science* 3: pp. 55-65, 2009.
22. Emil Jovanov, Dušan Starcevic, Aleksandar Samardzic, Andy Marsh, **Zeljko Obrenovic**, "EEG analysis in a telemedical virtual world", *Future Generation Computer Systems* 15 (1999), pp. 255-263.

Contributions to books

1. L. Hardman, **Z. Obrenovic**, and F. Nack, "Canonical Processes of Semantically Annotated Media Production", in Raphael Troncy, Benoit Huet, Simon Schenk (Editors), *Multimedia Semantics: Metadata, Analysis and Interaction*, August 2011, Wiley-Blackwell, pages 21-34.

2. **Zeljko Obrenovic**, Dusan Starcevic, Emil Jovanov, "Multimodal Presentation of Biomedical Data", in Metin Akay (Editor): *Wiley Encyclopedia of Biomedical Engineering*, Wiley, 2006, ISBN: 0-471-24967-X, DOI: 10.1002/9780471740360.ebs1325.
3. **Zeljko Obrenovic**, Dusan Starcevic, Emil Jovanov, "Virtual Instrumentation", in Metin Akay (Editor): *Wiley Encyclopedia of Biomedical Engineering*, Wiley, 2006, ISBN: 0-471-24967-X, DOI: 10.1002/9780471740360.ebs1265.
4. **Z. Obrenovic**, D. Starcevic, "History of Human-Computer Interaction", In Devedzic, V. (ed.) *Intelligent System Technologies*, FON – School of Business Administration & TEMPUS, Belgrade, 2004, pp. 73-90, ISBN 86-7680-026-X (in Serbian).
5. Dušan Starcevic, Emil Jovanov, Vlada Radivojevic, **Zeljko Obrenovic**, Aleksandar Samardzic, "Virtual medical devices for telemedical applications", in P. Spasic, I. Milosavljevic, M. Jancic-Zguricas (Eds.), *Telemedicine*, Academy of Medical Sciences of Serbian Medical Association, Belgrade, Yugoslavia, pp. 218-244, 2000.
6. Dušan Starcevic, Vlada Radivojevic, **Zeljko Obrenovic**, Emil Jovanov, Aleksandar Samardzic, "Technological breakthroughs in neurophysiology: Virtual medical devices for EEG analysis", in *Ilankovic (Ed.): Consciousness, sleeping, dreams*, Belgrade, 1999, pp. 145-158.