Zeljko Obrenovic

Curriculum Vitae

Contact

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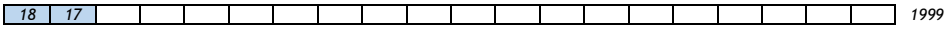
Career Overview

1. Professional Experience - Current Positions

Principal Consultant / Architect

Software Improvement Group (www.sig.eu), Amsterdam

January 2016 – present



Key Responsibilities:

- **Management & Leadership**: Leading **development and research** of new software products and analytics methods for analysis of IT systems' quality aspects, including, security (threat modelling, code reviews, architecture reviews), maintainability (static code analysis), performance, reliability (architecture and code reviews), and usability.
- **Product Development**: A member of **the product team**, facilitating productization of our services and tools.
- **Consultancy**: **An architect and software consultant**, helping clients to architect and build software systems that are usable, secure, robust and easy to maintain.

Key Technologies:

- **Hands-on**: Java, Javascript, Angular, Vue.js, HTML5, CSS, Javascript, D3, SVG, MySQL, MongoDB. Key tools: IntelliJ, Eclipse, Git (GitHub, GitLab), Jenkins, Jira, Maven, NPM, Security Analysis Tools (Checkmarx, BlackDuck, Coverity).
- **Analyzed technology stacks** (performed architecture reviews and source code analysis): Java (J2EE, Spring), .NET (C#, VisualBasic), PHP, HTML+JS+CSS (Angular, React), Pega, Mendix, BI / ETL / Big Data (Informatica PowerCenter, OBIEE, Hadoop, SQL), Cloud (AWS, Azure).

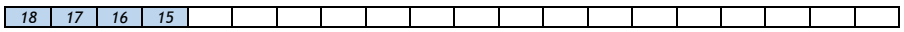
Key Clients:

- Product Companies: Exact, Centric
- Finance: ABN Amro
- Public Sector: EPO, Rijkswaterstaat, Politie, IGZ, NLO

Board Member

IEEE Computer Society (computer.org)

May 2015 – present



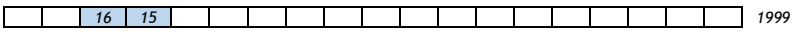
- **IEEE Software** - Advisory Board Member (2015-)
- **IEEE Computer** - Editorial Board Member (2017-)
- **IEEE IT Professional** - Editorial Board Member (2017-)

2. Professional Experience – Past Positions

Head of Software Measurement and Analysis

Software Improvement Group (www.sig.eu), Amsterdam

June 2015 – December 2016



Key Responsibilities:

- **Management & Leadership**: Leading and managing the software measurement and analysis group (direct line manager for 5 members), and innovation of the SIG measurement models based on the ISO 25010 standard (maintainability, security, performance reliability, usability)
- **Consultancy**: Consultancy on client projects in both public and private sector. As an architect and software engineering consultant I am involved in a number of complex projects, helping our clients to build software systems that are usable, secure, robust and easy to maintain.
- **Software Development**: Architect and developer of new software analytics tools.

Key Technologies:

- **Hands-on:** Java, Angular, HTML5, CSS, Javascript, D3, SVG, MySQL, MongoDB. Key tools: IntelliJ, Eclipse, Git (GitHub, GitLab), Jenkins, Jira, Maven, SIG Software Analysis Toolkit (SAT), Security Tools (Checkmarx, BlackDuck, Coverity).
- **Analyzed technology stacks** (performed architecture reviews and source code analysis): Java (J2EE, Spring), .NET (C#, VisualBasic), PHP, Symfony, HTML+JS+CSS (Angular, jQuery), Pega, Mendix, BI / ETL / Big Data (Informatica PowerCenter, OBIEE, Hadoop, SQL), Cloud (AWS, Azure).

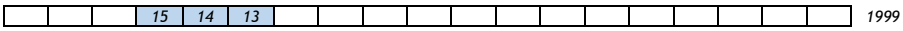
Key Clients:

- Product Companies (Mendix, OutSystems, Backbase),
- Finance (ABN Amro, BTPN, Voogd & Voogd),
- Public (Rijkswaterstaat, Belastingdienst, GVB), Utilities (T-Mobile, KPN, Vodafone, Eneco, SBM)

Senior Consultant / Software Quality Expert

Software Improvement Group (www.sig.eu), Amsterdam

January 2013 – June 2015



Key Responsibilities:

- **Consultancy** on client projects (lead technical consultant / architect)
- **Development** of interactive tools for exploration of source code, interactive visualization techniques
- **Innovation** of the SIG usability model
- **Coaching** junior consultants

Key Technologies:

- **Hands-on**: Java, HTML, CSS, Javascript, D3, SVG, MySQL, MongoDB. Key tools: IntelliJ, Eclipse, SVN, Jenkins, Jira, Maven, SIG Software Analysis Toolkit (SAT), Security Tools (Checkmarx, BlackDuck, Coverity).
- **Analyzed technology stacks** (architecture reviews and source code analysis): Java (J2EE, Spring), .NET (C#, VisualBasic), Alfresco, Drupal, PHP, HTML+JS+CSS, Pega, Mendix, BI / ETL / Big Data (Informatica PowerCenter, OBIEE, Hadoop, SQL).

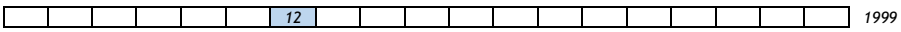
Key Clients:

- Public sector: Vlaamse Overheid, Belastingdienst, Gemeente Utrecht, ICTU, DUO, TLS / OV-ChipKaart, Vluchtelingenwerk, Jeugdzorg, Woningnet
- Utilities: DHL, KPN, Ziggo, ProRail
- Finance: De Lage Landen
- Product companies: Exact

Technical Evangelist, Solutions Consultant

Backbase (www.backbase.com), Amsterdam

January 2012 - January 2013



Key Responsibilities:

- **Knowledge Management**: Collecting and sharing best software development and architecture practices related to the Backbase UX management platform.
- **Software Development**: Hands-on software development and testing of Backbase portal.
- **Coaching**: Coaching on software architecture and development, both internal and external

Key Technologies:

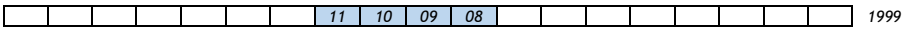
- Java, HTML, CSS, jQuery, Javascript, Spring, D3, SVG, Backbase Portal, OAuth2. Key tools: Eclipse, IntelliJ, SVN, Jenkins, Jira, Maven.

Key Clients:

- ABN Amro, PostFinance

Assistant Professor (Interaction & Software Design)

Eindhoven University of Technology - TU/e (www.tue.nl), Eindhoven
August 2008 - January 2012



Key Responsibilities:

- **Research** in the domain of design of interactive systems
- **Development** of novel interactive systems and tools
- **Coaching & teaching**, both undergraduate and master courses
- **Project lead** for the IOP-IPCR project

Key Technologies:

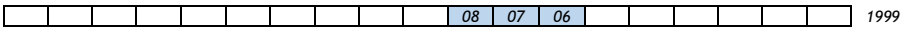
- Java, HTML, CSS, Javascript
- Speech Technologies: Sphinx Speech Recognizer, FreeTTS text-to-speech engine, Microsoft Speech API, Java Speech
- Computer Vision & 3D Graphics: OpenCV, OpenGL, VRML
- Device APIs: Phidget, Arduino, Wii Remote, Wii Fit

Industry Collaboration:

- Philips, Océ Technologies, DAF Trucks, Rademaker, TomTom

Research Scientist (Multimedia Systems, UX, HCI)

Centre for Mathematics and Computer Sciences (CWI), Amsterdam
January 2006 - August 2008



Key Responsibilities:

- **Design** of novel interactive systems,
- **Research** on semantic media and software development topics
- Participation (**lead**) in **international projects**: The ITEA Passepartout, K-SPACE

Key Technologies:

- Java, HTML, Javascript, CSS, Semantic Web (RDF, OWL), Virtual Reality Modelling Language (VRML), SVG, MPEG-4, MPEG-7, SMIL

Software Developer / Architect

Ministry of Defense, The Center for Command Information Systems, Belgrade, SR Yugoslavia / Serbia.
September 1999 – December 2005

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Key Responsibilities:

- Development of enterprise information systems
- Exploring novel software development technologies
- Supervising projects, teaching and education

Key Technologies:

- Visual C++, Java, JSP, ASP, VBScript, SQL Server, HTML, JS, CSS, UML

Freelance Software Developer

September 1994 – September 1999

Developed several administrative software solutions for small enterprises (at ad-hoc basis).

Developed tools for online presentation of live sport events. Supported several national and international sport events.

Key technologies: Java, HTML, JS, CSS, XML, SQL Server, Visual C++, MS Access, SQL Server, ASP, VBScript

2. Education

2004	**Ph.D. in Computer Science**, Computer Science, University of Belgrade, Belgrade, Serbia and Montenegro.
2001	**M.S. in Computer Science**, Computer Science, University of Belgrade, Belgrade. GPA: 10.00/10.00.
1999	**B.S. in Computer Science** (5-years program), Computer Science, University of Belgrade, Belgrade.

3. Open-Source Projects Activities

I am the main developer and architect of several open source systems.

Sketchlet (sketchlet.sourceforge.net/)

- Sketchlet is a software tools aiming to support software designer when they need to quickly explore, visualize, discuss or demonstrate software ideas.

Sketchify (sketchify.sourceforge.net/)

- *Sketchify* (also known as *AMICO Sketchpad*) is a toolset for sketching of novel classes of user interfaces. Sketchify extends the concept of paper and pencil sketching to a more generic concept of *rapid manipulation of interaction material*. Interactive material is any piece of software/hardware that represents or simulates a part of user interactive experiences, such as inputs from sensors, output of audio tools, interaction with Web services, or simple drawings. Through manipulation of interactive materials, designers create “interactive sketches”, which in rough terms illustrate interaction scenario or interaction techniques.

AMICO (amico.sourceforge.net)

- AMICO (Adaptable Multi-Interface COmmunicator) is a generic platform for rapid application development with heterogenious open-source and free software components and services. Original aim of AMICO was to support development of interactive applications in sensor-enhanced ambient environments. However, AMICO is much broader is scope, and it has been used in many other domains. The basic motivation of AMICO is to enable easier reuse of many existing software components from many open-source software (OSS) and free projects and services. AMICO is built on ideas from loosely-coupled integration platforms, middleware platforms for components integration, and service oriented architectures, but it focuses on pragmatic aspects of OSS integration, often absent from existing solutions.

4. Professional Community Activities

Honors and Grants

- 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.*")
- 2006 - Recognized as a **multimodal interface "guru"** by SIMILAR, European Network of Excellence dedicated to multimodal interfaces.
- 2000 – January 2002 – M.S. **scholarship grant** (first in rank) from The Ministry of Science, Research, and Technology, The Government of Serbia

Professional Memberships

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

Standardization

- Member of the W3C **Multimedia Semantics Incubator Group**

Languages

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

Personal interests

- Athletics
- Chess
- Philosophy

5. Coaching & Teaching Experience

I have extensive teaching and coaching experience in different roles and positions.

O'REILLY

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

TU/e

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)

VU

2006/2007, Amsterdam:

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

6. Selected Publications

Whatever I do, I try to generalize, share and publish the lessons I have learned. Here are some of my publications.

Books

1. **Z. Obrenovic**, **E. Stolterman**, *Design Instability: Notes on Design Complexity*, LeanPub 2017, 1st edition.
2. **Z. Obrenovic,** *Research and Practice: Essays of a Researcher-Practitioner,* LeanPub *2017*, 1st edition.
3. **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. Gaševic, "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.