CURRICULUM VITAE

Personals

Name: Dominik Johannes KNOLL
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Profession: Software and Systems Engineer
Preparation: PhD in Engineering Systems,
Masters Degree in Applied Computer Science

Current Work

External Lecturer, since October 2020

Faculty of Mathematics and Computer Science, Babeş-Bolyai University – Cluj-Napoca, Romania, www.cs.ubbcluj.ro

- Teaching of undergraduate courses in computer science in German language.
  Formal Languages and Compilers, Computer Architecture, Object Oriented Programming.

Publications

1. Brovar Yana, Menshenin Yaroslav, Knoll Dominik, and Fortin Clement. 2022. *Modeling of Engineering and Manufacturing Data Structures through a DSM-based Approach*, Proceedings of the IFIP 18th International Conference on Product Lifecycle Management July 2021. *(to appear in Springer Book, ISSN 1868-4238). Best paper award during conference.*

2. Knoll Dominik, Fortin Clement, and Golkar Alessandro, 2021. *A process model for conceptual design of space systems*, Systems Engineering, doi:10.1002/sys.21576, ☑ Scopus

3. Menshenin Yaroslav, Knoll Dominik, Yana Brovar, Crawley Edward, Fortin Clement. 2020. *Digital Engineering Information Exchange Model for Space Missions Architecture: a Case Study of a CubeSat Mission*, in *71st International Astronautical Congress (IAC)*, October 2020. ☑ Scopus

4. Menshenin, Yaroslav, Knoll Dominik, Brovar Yana, Fortin Clement. 2020. *Analysis of MBSE/PLM Integration: From Conceptual Design to Detailed Design*, in *Proceedings of IFIP 17th International Conference on Product Lifecycle*, pp. 593–603, doi: 10.1007/978-3-030-62807-9_47, ☑ Scopus

5. Knoll Dominik, Fortin Clement, and Golkar Alessandro. 2018. *Review of Concurrent Engineering Design Practice in the Space Sector: State of the Art and Future Perspectives*. In 2018 IEEE International Systems Engineering Symposium (IEEE ISSE 2018). Rome, Italy. doi: 10.1109/SysEng.2018.8544387, ☑ Scopus

6. Knoll Dominik, Alessandro Golkar, and Olivier de Weck. 2018. *A Concurrent Design Approach for Model-Based Technology Roadmapping*. In 2018 Annual IEEE International Systems Conference (SysCon), 1–6. Vancouver, Canada: IEEE. doi:10.1109/SYSCON.2018.8369527, ☑ Scopus

7. Fortin Clément, Grant McSorley, Dominik Knoll, Alessandro Golkar, and Ralina Tsykunova. 2017. *Study of Data Structures and Tools for the Concurrent Conceptual Design of Complex Space Systems*. In IFIP 14th International Conference on Product Lifecycle Management 9-12 July 2017, Seville, Spain. Seville. doi:10.1007/978-3-319-72905-3_53, ☑ Scopus

8. Knoll Dominik, and Golkar Alessandro. 2016. *A Coordination Method for Concurrent Design and a Collaboration Tool for Parametric System Models*. Concurrent Engineering, 26(1), pp. 5–21. doi: 10.1177/1063293X17732374, ☑ Scopus

9. Rustam Akhtyamov, Ignasi Lluch, Cruz, Hripsime Matevosyan, Dominik Knoll, Udrivolf Pica, Marco Lisi, Alessandro Golkar. (2015). *An implementation of software defined radios for federated aerospace networks*. Acta Astronaut., vol. 123, pp. 470–478, Jun.2016. doi: 10.1016/j.actaastro.2015.12.043, ☑ Scopus

Conference Presentations

Smirnov, Dmitry, Knoll, Dominik, and Alessandro Golkar. 2016. *Gamespace exploration approach to complex systems design*. Presented at Conference on Systems Engineering Research.

Babkina, T. S., Lukinova, E., Myagkov, M., & Knoll, D. 2015. *A pocket laboratory for 2 x 2 games*. Presented at First Lancaster Game Theory Conference. doi:10.13140/RG.2.2.32811.44328

Former Employments

Researcher and PhD Candidate, April 2014 – January 2020

Skoltech, Skolkovo Institute of Science and Technology -- Moscow, Russia, www.skoltech.ru

- Research on concurrent design methodology and collaborative tool support.
- Doctoral Thesis "Model-based Processes and Tools for concurrent conceptual design of space systems"
- Development of a multiplatform open source data exchange tool for collaborative and concurrent design (cedesk.github.io).
- Managing a 15month industrial research project on concurrent technology roadmapping for Airbus Group CTO.
- Training in Space Systems Engineering, Entrepreneurship and Innovation.
- Teaching Assistant in Spacecraft and Mission Design Course, Fall 2015 & Fall 2016.
- Overseeing the outfitting of the concurrent design facility by external contractors.
- Setup the IT infrastructure and manage the operations of the concurrent design facility.
- Participating and conducting feasibility studies for small satellites and electrical power systems.
- Conduction of several High-Altitude Balloon launch campaigns with communication payloads, winning Stanford Global Balloon Challenge in 2015.
- Collaboration in various research projects and co-authoring several publications.

Web Portal Developer

SMC Treviso -- Moscow, Russia / Treviso Italy, www.smc.it -- February 2013 – February 2014

- Implementation of custom plugins and customization of standard plugins according to customer requirements
- Participation in open source developers' community
- UI customization by means of Liferay Themes
- 1st and 2nd level support on Liferay
- Integration of Liferay with Business Process Management Engines (camunda, jBPM)
- Used Tools: Eclipse, Subversion, Ant, Git, JIRA

Java Developer

E-Style Software House -- Moscow, Russia   November 2011 – December 2012

- Implementation of Enterprise Web Applications (J2EE, Websphere Appplication Server, Tomcat)
- Web user-interface design and implementation (Struts2, JSP, HTML, CSS, Javascript, AJAX)
- Implementation of persistence layer (MyBatis, SQL)
- Database design (DB2, PowerDesigner, DML)
- Collaboration in project of 4 man-years for governmental organization
- Used Tools: IDEA, Subversion, Ant, RequisitePro, ClearQuest

ERP Engineer

Azur -- Incisa Val d'Arno / Florence, Italy   December 2009 – January 2011

- Customization of report and business process in the ERP system "MAGOxp and MAGO.NET".
- Oracle database design, query performance tuning, and database maintenance.
- Implementation of stored procedures for material resource planning based on sales forecasts.
- Creation of tools in for the migration of the ERP system.
- IT support for modernization of production process to LEAN manufacturing.
- Integration of a time tracking system based on fingerprints with the ERP system.

IT Manager

Formation and Meeting Center -- Montet / Fribourg, Switzerland   Dec. 2008 – Dec. 2009

- Support for Intranet and Mail services on Windows Server and Exchange.

- Asset documentation with Visio.
- Implementation of multi-language support for the website in PHP.
- Server, workstation and network administration and user support.
- Renewal of Internet connectivity and WLAN infrastructure.

Import and Sales Technician

Azur -- Incisa Val d'Arno / Florence, Italy, www.azurline.it   October 2007 – November 2008

- B2B data exchange with the Portuguese stroller producer Bébécar.
- Implementation of sales forecast and acquisition planning in Excel and VBA.
- Organization of distribution logistics.

Undergraduate Research Assistant

Department of Scientific Computing, University of Salzburg / Austria, www.cosy.sbg.ac.at,
September 2005 – June 2006

- Research documentation according to University and academic quality standards.
- Collaboration in research projects' preparation for funding requests.

Education

Babeș-Bolyai University, Cluj-Napoca (2020)
Romanian as foreign Language. Certificate RLS B2.

Skolkovo Institute of Science and Technology, Moscow (2014-2020)
Doctoral degree in Engineering Systems.

Russian State University for Humanities, РГГУ (2011 - 2014)
Russian as foreign language. Certificate TRKI I.

University of Salzburg (2004 – 2007)
Master's degree in applied computer science, specialized in Natural Computing; passed with distinction.

University of Salzburg (2000 – 2004)
Bachelor's degree in applied computer science.

Engineering Skills

Systems Engineering: Conceptual Design, Concurrent Design, SysML, OPM

Software Engineering: OOP, design patterns, database design, modeling with UML, agile software development

Programming Languages: Java, JavaScript, C++, SQL, Python, PHP, C#, ADA, C, Assembler

Web Development: Apache Tomcat, JSP, Servlets, EJB, HTML, CSS, React

Software Construction Tools: IntelliJ Idea, Ant, Maven, Subversion, Git, TestNG, jUnit

Databases: MySQL, IBM-DB2, Oracle, DML, SQL, query optimization, stored procedures

Administration: operation systems installation and configuration of Linux, Windows, Mac

Miscellaneous

Languages
- German, mother language
- English, fluent spoken and written
- Italian, fluent spoken and written
- Russian, professional efficacy
- Romanian, intermediate level

Strengths
- Enthusiasm for transmitting knowledge

- Willing to learn
- Enjoying challenges
- Ability to work in a team
- Readiness to take on responsibility

Interests
- Dialogue between Science and Faith
- Sustainable Technology Development
- Ethics in Engineering