

**CV Dr. Peter Krall**

Date of birth	Oct. 22 <sup>nd</sup> 1960
Academic degree	Dr. phil. (symbolic logic) University of Vienna

**Resume****Skills****Key competence:**

- Analysis of business requirements, technical constraints and the relation between both. Conceptualization, design and implementation of solutions in cooperation with domain experts.
- Development of domain-specific meta-models and languages, code-generators, compilers, tools for machine-assisted analysis of (legacy) code.

**Object Oriented Development:**

- Design and implementation of object oriented software systems, acting as lead developer/architect.
- Extensive project experience working with Java, C#, C++.
- Analysis in cooperation with domain experts.
- Modeling using UML or domain specific meta-models.
- Conceptualization and design.

**Model driven development & computer-aided software engineering**

- Domain specific language design.
- Development of parsers, compilers and code-generators
- Development of tools for software analysis and reverse engineering.
- Development of frameworks and base class systems.
- Publications and conference contributions on domain specific modeling.

**Engagement as lead developer in the team.****Languages**

C#, Java, C/C++, SQL, R, XML, Basic, COBOL, Pascal, UML.

**Development environments and tools**

Eclipse including various plugins, VS.Net including. SDK, Mathematica, Toad, MSSQL-Server, MetaCase CASE-tool, Select Component Factory, JBuilder, MS-VisualStudi, ANTLR4, YACC, Bison, JavaCC, KNIME datamining framework.

**Database**

DB2, MS-SQLSERVER, Oracle

**Operating Systems**

Windows 7 (XP/NT/2000), Linux (Suse, Redheat), UNIX, MVS.

**Foreign languages und experience abroad**

Foreign Languages	English: Fluent Italian: Basic.
Experience abroad	1992-1994: In the context of scientific cooperation between KLI, Austria and Yale University, Connecticut, USA: ca 50% residence in USA.

**Professional experience**

From April, 1 <sup>st</sup> 2013	Freelancing software engineer
2010-March, 31 <sup>st</sup> 2013	Senior Software Architekt at Contec-X GmbH, Munich
2009-2010	Technical senior consultant with focus on 'CA Clarity PPM' at Contec-X GmbH, Munich
2005-2009	Softwaredesigner and lecturer (OOA/OOD, UML) at Cortex-Brainware GmbH, Pullach
1994-2004	Freelancing software architect and developer, mainly working for Dr. Walter Griebel Software GmbH, Munich.
1992-1994	Scientist at Konrad-Lorenz-Institute for Studies in Evolution and Cognition in Altenberg/Austria and Visiting Fellow at Yale University, Connecticut.
1990-1992	Lecturer for logic and philosophy of science at, Vienna University Scholar at Konrad-Lorenz-Institute for Studies in Evolution and Cognition in Altenberg/Austria
1978-1990	Freelancing software engineer

**Academic education (in parallel with freelancing software development)**

1991	Doctoral thesis: ‚Logical Aspects of a Meta-Theory for Problem – oriented Theory-development Strategies‘.
1981-1990	Vienna University: Mathematical Logics and Biology
1980-1981	TU Graz: Technical Mathematics / Computer Science.
1979-1980	University of Innsbruck: Mathematics and Meteorology

**Publications**

2014	Krall, P. <i>Generating Code Using Reflection in the Context of Computer-Assisted Legacy System Analyses and Reengineering</i> . In <i>Proceedings of the 14th Workshop on Domain-Specific Modeling (DSM '14)</i> . ACM, New York, NY, USA, 7-12. DOI=10.1145/2688447.2688449 <a href="http://doi.acm.org/10.1145/2688447.2688449">http://doi.acm.org/10.1145/2688447.2688449</a>
2007	Krall, P. <i>How does Intelligent Functionality Provided by the Meta-Model in Model Driven Development Relate to Model Semantics?</i> In Sprinkle, J., Gray, J., Rossi, M., Tolvanen, J.-P., (eds.) <i>Proceedings of the 7<sup>th</sup> OOPSLA workshop on Domain-Specific Modeling</i> . Montreal, Canada. University of Jyväskylä, Technical Reports, TR-38, Finland, 2007
2006	Krall, P. <i>Model Integration in Domains Requiring User -Model Interaction and Continuous Adaptation of Metamodel</i> . In Gray, J.,

- 1995 Tolvanen, J.-P., Sprinkle, J., (eds.) Proceedings of the 6<sup>th</sup> OOPSLA workshop on Domain-Specific Modeling, Portland, Oregon, University of Jyväskylä, Technical Reports, TR-37, Finland, 2006  
Krall,P. & Misof,K.: *Constraints in the evolution of organismic structures and their consequences for adaptation of cognitive mechanisms*. In N.Thompson(ed): *Perspective in ethology*(11). Behavioral Design. Plenum Press, New York: 149-190.
- 1994 Krall,P & Wagner, G.P.: A mathematical model for the accumulation of constraints in evolution. Technical Report, Yale University.
- 1994 Participation in work on studies on ‚Theorien und Modelle in der Kulturlandschaftsforschung‘ (Theories and Models in Research on Human-shaped Landscapes): *Modulation of Complex Systems‘ Dynamics with limited Means and incomplete Knowledge* for Bundesministerium für Wissenschaft und Forschung.
- 1993 Wagner, G.P. & Krall, P.: *What is the difference between models of error thresholds and Muller’s ratchet?* Journal of Mathematical Biology (1993) 32:33-44.
- 1993 *The role of processing logical calculi in adaptive self-modification*. 13th International Congress of Cybernetics, Namur, Proceedings: 870-874.
- 1993 A purely pragmatic approach to the theory of symbolic calculi. In J.Czermak (Hrsg): *Philosophie der Mathematik*. Akten des 15.ten internationalen Wittgenstein Symposions. Hölder-Pichler-Temsky, Wien: 361-370.
- 1992 *A model for procedural representation as basis for adaptive self-modification*. Evolution & Cognition II,3: 211-232

## **Projects**

### **Recent commerical projects (since 2000)**

03/2016 – 02/2017

*As a member of an interest group of mathematicians and computer scientists.*

- Development of machine learning prototype for pattern recognition.

C#, SQL

01/2015 – 12/2016 (in parallel with project 03/2016ff and 07/2014ff)

*For a company engaged in providing BI solutions and consulting (same client as the project listed below, changing between tasks),*

- Development of components for graph visualization.

Java, Javascript, SQL(postgres), Neo4J, Keylines, Cypher

07/2014 – 12/2016

*For a company engaged in providing BI solutions and consulting*

Development of a tool for database/data-model analysis on base of parsing and analyzing SQL-code from a metadata repository.

Antlr4, SQL, Java

01/2014 – 08/2014

*Private 'proof of concept' project:*

Integration of DSM-based modeling with PROLOG knowledge base for generating codes for robot action control.

PROLOG, C#

12/2013 – 04/2014

*For a Startup in IT-Security-Management field*

Analysis, specification and implementation of framework and core components of a system directing relevant information to responsible units, based on assets and responsibilities defined by the customer. Development of a framework for generic versioned persistence of class systems defined by external data feeds, using meta-

programming techniques. Development of connectors to external data feeds. Data-mining functionality implemented in KNIME framework.

Java, SQL, KNIME-Dataminer, Java-Metaprogramming.

07/2013 – 12/2013

*For a DAX logistics company using CA-Clarity PPM*

Analysis, specification and implementation of modules providing additional functionality for controlling. The module is seamlessly integrated into CA Clarity but implemented in form of custom Java classes and SQL scripts.

Java, SQL, Clarity Studio.

from 2013 to 07/2013

*For a Swiss bank: Enhancements of CA Clarity functionality and integration of CA Clarity into system environment.*

Technology: Java, SQL, Clarity Studio, Framework and generators for SOA-based integration.

Roles: Analyst / (Lead) Developer / Architect

from 2011 - 2013

*Software modules for Integration of CA Clarity PPM with SAP, XPert HR, IBM Tivoli Directory Server, BMC application management*

Java, Axis, LDAP (UnboundID LDAP SDK), Clarity Studio, Framework and generators for service-oriented integration developed in 2010.

Analyst / Lead Developer / Architect

02/2012-03/2012

*Development of a C#-Assembly, providing a UDF for extraction of data from BLOBs based on existing Java-coded functionality by calling a WS wrapping the Java classes.*

C#, VS 2010, Java.

(Sole) Developer

from 2009, ongoing

*Modification and extension of standard CA Clarity PPM functionalities.*

Java, SQL, ,Clarity Studio‘ configuration utility.

06/2010-12/2010

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*Development of a web-based software system for time recording, integrated seamlessly into CA Clarity PPM and replacing standard functionality.*

Technology: Java, SOAP.

Roles: Analyst / Lead Developer / Architect

02/2010-06/2010

*Development of a framework and tool-set for integration of CA Clarity PPM with other systems, using a service-oriented approach.*

Technology: Java / SOAP, DSM, code-generation

Role: Designer & developer

01/2010-12/2010

*Development of functionality for programmatic transformation of CA Clarity PPM business objects.*

Java / embedded SQL

03/2010

*Development of an application for loading initial data from Excel into the repository of CA Clarity PPM.*

Java / embedded SQL

02/2007-02/2008

*Development of an application for data transfer from a legacy system into the new system, including development of a domain-specific meta-model using MS.DSL-tools. Development of code-generators based thereon.*

Technology: C#, VS.Net inkl. DSL-tools aus VS-SDK, C++

Roles: Development of Meta-Programs, Team-leader.

2007

*Preparation of a course on MDD/MDA.*

02/2006-01/2007

*Reverse engineering of a legacy application, using a proprietary language, compiler and virtual machine. Development of tools for code-analysis and decompilation of proprietary byte-code.*

C#, VS.Net.

Roles: Development of parsers and programs for computer-aided code analysis / Team-leader / Technical Project Manager.

05/2005-12/2005

*Import of a COBOL-Copybook library into the repository of a MDA-Tool.  
Development of code-generators for generating COBOL sources from the data model.*

Technology: UML, Select Component Factory, VB6

Roles: Developer for parsers and code-generators

03/2005-03/2008

*Lecturer for courses on OOA/OOD using UML. Author and lecturer for courses on SOA and MDD.*

05/2004-12/2004

*Development of a data-modeling environment with generators for code adapted to an existing software family.*

Technology: Java, Eclipse, UML, DB2

Roles: Analyst, Developer.

02/2004-04/2004

*Further development of a provisioning software System for an insurance company*

Technology C++, C, XML.

Roles: Analyst, Member of development team.

09/2003-02/2004

*OCR-based system for capturing dentist bills and transformation into data to be used by an expert system for semantic analysis.*

Technology : C++ (VC6), Scansoft Omnipage, C, XML

Roles: Analyst, Lead Developer

07/2003-08/2003

Consultancy regarding further development of a provisioning system.

Role : Advisor



05/2003-06/2003

*Development of a prototype for a database access layer able to handle data conformant to various versions of a data-model.*

Technology : Java, UML

Role : Analyst, (Sole) Developer.

03/2003-04/2003

*Provisioning system for an insurance system*

Technology: C/C++, UML.

Roles: Analyst / Architect / Developer framework development.

02/2003-02/2003

*Automated GUI-conversion: Conversion of a GRID-based presentation layer into a HTML-based layout*

Technology: C/C++, Java, JavaCC.

Analyst / Developer for parser and code-generator.

11/2002-02/2003

*Computer-aided analysis of a system of XCOBOL-Programms for identification of memory leaks. Development of a parser and call-path analyzer.*

Technology: Java, JavaCC, Eclipse.

Role: Analyst-Developer.

10/2002-10/2002

*Portation of an insurance system from MVS to Linux.*

Technology: C++

Role: Software engineer

03/2002-09/2002

*Feasibility study for an object oriented insurance system*

Technology: UML, Java.

Role: Analyst / Developer of a POC-prototype.

02/2002-02/2002

*Report generator for an insurance company. The software allowed definition of reports in a domain-specific language, based on predefined templates.*

Technology: Java, JBuilder, SQL(Db2).

Role: Analyst / Developer.

04/2000-08/2002

*Computer-aided portation of an insurance system from MVS to Windows and Linux. The task implied the necessity for semi-automatic code refactoring due to the size of the application. Moreover, generating code variants for different target systems was required in the context of evaluating possible successor systems for the existing MVS.*

*This project actually consisted of a series of projects for analysis, evaluation of alternatives and, finally, portation to a target system.*

Technology: C++, C, YACC., LEX.

Role: Analyst / Developer for parser and code-generator.

03/2001-06/2001

*Computer-aided analysis of banking software. This project aimed at analysis of an existing application for quality improvement.*

Technology: C++, C, YACC., LEX.

Role: Analyst-Programmer.

02/2001-02/2001

*Setup of an AIX System.*

01/2001-01/2001

Development of a Java-Wrapper-class layer for a generated c-implemented db-access layer.

Technology: Java, SQL, JNI, C.

Role. Developer

11/2000-12/2000

*Integration of Java- and C++-components in an insurance system.*

Technology: Java, C++.

Role: Advisor / Prototype developer

09/2000-10/2000

*Life insurance system*

Technology: C++, C

Role: Developer of framework classes.

07/2000-08/2000

*Studio for database administration, embedded in existing systems for access right administration, code-generation and verification in a heterogeneous system environment.*

Technology: Java, C++, JNI, DB/2

Role: Analyst-Programmer.

05/2000-06/2000

*Modification and further development of generators for db-access.*

Technology: C++, SQL, DB2

Role: Analyst-Programmer.

04/2000-05/2000

*Design for a life insurance system.*

Technology: Abstract design – lead for C++ implementation.

Role: Analyst / Architect.

## Projects before 2000

Between 1994 and 2000 I engaged in various projects mainly in banking and insurance. Among those, I want to mention the following project, even if it dates back to mid-90ties.

05/1994-10/1995

*Definition of a rule-description language for an insurance company. Development of a cross-compiler, generating COBOL-coded modules from the rule definitions.*

Technology: C, YACC, COBOL.

Role: Analyst-Programmer.

## Non-commercial projects

In addition to commercial work, I also engaged in non-commercial projects. I like to mention these activities:

05/2012-ongoing:

*Studies in conditions for stability of economic systems and computational modeling of such systems.*

Technology: Theoretical studies, C++.

Role: Member of an interest group.

03/2008-03/2009

*Studies in potential of model driven development. Development of prototypes. Authoring a white paper.*

Technology: VS-Net, C#, VS-SDK, MetaCASE.

Role: Analyst-Programmer, Author.

01/2003-12/2004

*Framework, modeling environment and generators for versioned business-object classes.*

Technology: Java, XML, eclipse.

Role: Analyst-Programmer.