

# Christoph Redl

*Curriculum Vitae (12/2021)*



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## Personal Information and Education

<b>Born</b>	3rd of July, 1986 in St. Pölten, Austria
<b>Languages</b>	German (native), English (fluent)
<b>Education</b>	<ul style="list-style-type: none"><li>• 2014: Dr. techn. (<math>\cong</math> Ph.D.) in <i>Computer Science (AI)</i> (TU Vienna)</li><li>• 2010: Dipl.-Ing. (<math>\cong</math> M.Sc.) in <i>Medical Informatics</i> (TU Vienna)</li><li>• 2010: Dipl.-Ing. (<math>\cong</math> M.Sc.) in <i>Computational Intelligence</i> (TU V.)</li><li>• 2008: BSc. in <i>Software and Information Engineering</i> (TU Vienna)</li><li>• 2005: <i>Technical upper secondary school (IT)</i> in St. Pölten</li></ul>
<b>Summary of skills</b>	<ul style="list-style-type: none"><li>• Software development (focus on C#, Python, C++, Java)</li><li>• Experience with various frameworks (e.g. TensorFlow, Xamarin)</li><li>• Thematic focus on AI, algorithms and math in computer science</li><li>• Computer graphics (e.g. DirectX, OpenGL, Unreal Engine)</li><li>• Extensive research and teaching experience</li><li>• Comprehensible presentation and publication of complex content</li><li>• Leading teams in teaching and software development</li><li>• Structure information and organize workflows</li><li>• Longtime general experience in the area of IT</li></ul>

## Career History

<b>2019–ongoing</b>	<b>Senior Lecturer and Researcher in Artificial Intelligence</b> at University of Applied Sciences Technikum Wien <b>Responsibilities:</b> research, project proposals, software development (Java, Python, SQL, PL/SQL), teaching, advancement of curricula (head of the teams in the areas algorithms and data structures and AI)
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<b>2015–2019</b>	<b>Assistant Professor</b> (fixed-term) at TU Vienna, Institute of Logic and Computation <b>Responsibilities:</b> research, project proposals, software development (C++, Java, Python), experiments, benchmarking and data analysis (R), teaching (lectures, exercise lessons, supervision of theses), coordinating student assistants and tutors, IT administration, administrative tasks
<b>2014–2015</b>	<b>Postdoctoral Researcher (FWF) and Software Developer</b> at TU Vienna, Institute of Information Systems <b>Responsibilities:</b> research, software development (C++, Java, Python, AJAX), teaching (lectures, exercise lessons, supervision of theses)
<b>2010–2014</b>	<b>Predoctoral Research Assistant (FWF) Software Developer</b> at TU Vienna, Institute of Information Systems <b>Responsibilities:</b> research, software development (C++, Java), experiments, benchmarking and data analysis (R), teaching (exercise lessons, supervision of theses)
<b>2007–2010</b>	<b>Tutor</b> at various institutes of TU Vienna <b>Responsibilities:</b> teaching (exercise lessons and exercise solution discussions)
<b>2004</b>	<b>IT internship</b> at Cincinnati Extrusion GmbH (IT department), Vienna, Austria <b>Responsibilities:</b> development of a database application, IT-administration, help-desk tasks, hardware assembling
<b>2002</b>	<b>Office internship</b> at A. Porr AG (IT department), Vienna, Austria <b>Responsibilities:</b> extension of a database application, Web development, office tasks

## Scientific Work

<b>Publications</b>	10 journal, 21 conference and 6 workshop publications (including 8 as sole author), 9 research reports in the areas of logics, symbolic AI and automated reasoning
<b>Scientific projects</b>	participation in 3 FWF-funded projects (one as Co-PI), and in one project funded by the City of Vienna
<b>Project proposals</b>	significant participation in successful fundraising of two FWF projects (one as Co-PI), further participation in several FFG projects
<b>Community service</b>	reviewing for various scientific journals/ conferences/ workshops, service in several organization/ program/ award committees

## Teaching Experience

<b>Courses</b>	14 courses at TU Vienna in the areas of AI/ logics/ programming/ database systems (one as sole lecturer), 15 courses at FH Technikum Wien in the areas of AI, algorithms and data structures, programming, database systems, scientific working (including 6 as team leader and 3 as sole lecturer)
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**Thesis supervision** co-supervision of 4 master and 9 bachelor theses at TU Vienna, supervision of 9 master and 18 bachelor theses as FH Technikum Wien

## Computer & IT Skills

<b>Operating Systems</b>	Linux systems, macOS, Microsoft Windows
<b>Programming</b>	C, C++, Java, C#, Visual Basic (6, VBA and .NET), Python, JavaScript, PHP, Perl, Linux/Unix shell scripting
<b>Libraries</b>	clib, STL, Boost libraries, .NET Framework, ASP .NET, Xamarin, WPF, Java Servlets
<b>Declarative Languages</b>	Datalog, answer set programming, HEX-programs, Prolog, XML, multi-context systems, description logics, ontologies, Semantic Web, Haskell, Lambda expressions
<b>Artificial Intelligence</b>	TensorFlow and Keras, scikit, NumPy, ML.NET, TensorFlow.NET, Accord.NET, statistics system R
<b>Text Processing</b>	MS Office, OpenOffice, LibreOffice, $\text{\LaTeX}$ , HTML, WML
<b>Version Control</b>	Git, Subversion, CVS
<b>Development Tools</b>	GNU compiler collection, GNU build system, Valgrind, clang, Emscripten, Visual Studio, Eclipse, NetBeans, Azure DevOps, Jupyter Notebooks
<b>Databases</b>	SQL, PL/SQL, trigger, interfaces to procedural languages (e.g. JDBC), MS SQL Server, Oracle Database, MySQL, PostgreSQL
<b>Server Administration</b>	experience in the administration of file, Web, SVN and benchmark servers (NFS, Apache, HTCondor), with virtualization (VirtualBox) and with remote access (SSH)
<b>Computergraphics &amp; Gaming</b>	OpenGL, DirectX (esp. Direct3D), XNA Framework, MonoGame, shader programming (GLSL, HLSL, Cg), Unreal Engine, Blender
<b>Compiler Construction</b>	strong background in formal languages, experience in programming language design, experience with parser and compiler generators (Lex, Yacc, Bison, Boost Spirit)
<b>Software Engineering</b>	strong background in algorithms and data structures, methods for efficient programming, experience with software design patterns, experience in test case design including unit tests (e.g. TestNG), experience in agile software development and test-driven development
<b>Benchmarking</b>	experience in benchmarking, data analysis and presentation of the results, HTCondor and Slurm
<b>Miscellaneous</b>	experience with e-learning platforms (e.g. Moodle)

## Participation in Software Development Projects

<b>AIAV (2020–2021)</b>	AI applications for small and medium enterprises.
<b>ClingoApp (2019)</b>	<b>Technologies:</b> logic-oriented programming, ontologies Port of the answer set solver <i>Clingo</i> to Android and iOS. <b>Technologies:</b> C#, JavaScript, Xamarin, Emscripten

<b>Online Reasoner (2015)</b>	Allows for using reasoner software via Web interfaces. <b>Technologies:</b> AJAX, virtualized server
<b>mytheorem (2015)</b>	A $\text{\LaTeX}$ package for flexible proof positioning.
<b>ABC (2014–2019)</b>	A system for automated benchmarking, formatting of the results, e-mail notifications, and statistical comparisons of several runs. <b>Technologies:</b> HTCondor, shell and R scripts
<b>AngryHEX (2012–2019)</b>	An AI agent for the <i>AngryBirds</i> computer game. <b>Technologies:</b> Java, C++
<b>DLVHEX (2010–2019)</b>	A reasoner for HEX-programs (logic programs). <b>Technologies:</b> C, C++, Python, Boost libraries, GNU tools
<b>dsync (2009–2013)</b>	A utility for two-way synchronization of distributed directories. <b>Technologies:</b> Java
<b>MELD (2009–2011)</b>	Allows for integration of multiple knowledge-bases. <b>Technologies:</b> C++, Lex, Yacc, Boost Spirit
<b>Internship (2004)</b>	Development of a database application for IT administration. <b>Technologies:</b> Visual Basic .NET, Microsoft Access
<b>Internship (2002)</b>	Extension of custom database application for the management of construction projects. <b>Technologies:</b> Visual Basic 6, Microsoft Access