

Christoph Redl

Curriculum Vitae (02/2023)

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Personal Information and Education

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

Career History

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| 2019–ongoing | Senior Lecturer and Researcher in AI , FH Technikum Wien Tasks: research, project proposals, software development, teaching, advancement of curricula, head of the teams in the areas algorithms and data structures and AI |
| 2015–2019 | Assistant Professor (fixed-term), TU Vienna Tasks: research, project proposals, software development, experiments, data analysis, teaching, coordinating student assistants and tutors, IT administration, administrative tasks |
| 2014–2015 | Postdoctoral Researcher (FWF) and Software Developer , TU Vienna Tasks: research, software development, teaching |
| 2010–2014 | Research Assistant (FWF) Software Developer , TU Vienna Tasks: research, software development, experiments, data analysis |
| 2007–2010 | Tutor , TU Vienna Tasks: teaching in various courses (exercise lessons) |
| 2004 | IT internship , Cincinnati Extrusion GmbH Tasks: database development, IT-administration, help-desk tasks, hardware assembling |

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| 2002 | Office internship , A. Porr AG (IT department) Tasks: database development, Web development, office tasks |
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Scientific Work

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

Teaching Experience

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| Courses | 14 courses at TU Vienna (AI, logics, programming, database systems), one as sole lecturer; 17 courses at FH Technikum Wien (AI, algorithms and data structures, programming, database systems, scientific working), 6 as team leader and 3 as sole lecturer |
| Thesis supervision | co-supervision of 4 master and 9 bachelor theses at TU Vienna, supervision of 18 master and 34 bachelor theses at FH Technikum Wien supervision of 6 industry internships at FH Technikum Wien |

Computer & IT Skills

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| Operating Systems | Linux systems, macOS, Microsoft Windows |
| Programming | C, C++, Java, C#, Visual Basic (6, VBA and .NET), Python, JavaScript, PHP, Perl, Linux/Unix shell scripting |
| Libraries | clib, STL, Boost libraries, .NET Framework, ASP .NET, Xamarin, WPF, Java Servlets |
| Declarative Languages | Datalog, answer set programming, HEX-programs, Prolog, XML, multi-context systems, description logics, ontologies, Semantic Web, Haskell, Lambda expressions |
| Artificial Intelligence | TensorFlow and Keras, scikit, NumPy, ML.NET, TensorFlow.NET, Accord.NET, statistics system R |
| Text Processing | MS Office, OpenOffice, LibreOffice, L ^A T _E X, HTML, WML |
| Version Control | Git, Subversion, CVS |
| Development Tools | GNU compiler collection, GNU build system, Valgrind, clang, Emscripten, Visual Studio, Eclipse, NetBeans, Azure DevOps, Jupyter Notebooks |
| Databases | SQL, PL/SQL, trigger, interfaces to procedural languages (e.g. JDBC), MS SQL Server, Oracle Database, MySQL, PostgreSQL |
| Server Administration | administration of file, Web, SVN and benchmark servers (NFS, Apache, HTCondor), virtualization (VirtualBox), remote access (SSH) |

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| Graphics & Gaming | OpenGL, DirectX (esp. Direct3D), XNA Framework, MonoGame, shader programming (GLSL, HLSL, Cg), Unreal Engine, Blender |
| Compiler Construction | strong background in formal languages, programming language design, parser and compiler generators (Lex, Yacc, Bison, Boost Spirit) |
| Software Engineering | efficient programming (i.e. algorithms and data structures), software design patterns, test case design including unit tests (e.g. TestNG), agile software development, test-driven development |
| Benchmarking | experience in benchmarking, data analysis and presentation of the results, HTCCondor and Slurm |
| Miscellaneous | experience with e-learning platforms (e.g. Moodle) |

Participation in Software Development Projects

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| Bot for Space Shooter | Development of an AI-bot for a game based on reinforcement learning. Technologies: C#, TensorFlow.NET, MonoGame |
| KITE | Applications of AI technologies in the energy sector. Technologies: various AI methods, databases |
| AIAV | AI applications for small and medium enterprises. Technologies: logic-oriented programming, ontologies |
| ClingoApp | Port of the answer set solver <i>Clingo</i> to Android and iOS. Technologies: C#, JavaScript, Xamarin, Emscripten |
| Online Reasoner | Allows for using reasoner software via Web interfaces. Technologies: AJAX, virtualized server |
| mytheorem | A \LaTeX package for flexible proof positioning. |
| ABC | A system for automated benchmarking, formatting of the results, e-mail notifications, and statistical comparisons of several runs. Technologies: HTCCondor, shell and R scripts |
| AngryHEX | An AI agent for the <i>AngryBirds</i> computer game. Technologies: Java, C++ |
| DLVHEX | A reasoner for HEX-programs (logic programs). Technologies: C, C++, Python, Boost libraries, GNU tools |
| dsync | A utility for two-way synchronization of distributed directories. Technologies: Java |
| MELD | Allows for integration of multiple knowledge-bases. Technologies: C++, Lex, Yacc, Boost Spirit |
| Administration-DB | Development of a database application for IT administration. Technologies: Visual Basic .NET, Microsoft Access |
| Construction Projects-DB | Extension of a DB-application for construction projects management. Technologies: Visual Basic 6, Microsoft Access |
| Various student projects | Participation in numerous open source- and student projects in the areas of compiler construction, image processing, computer graphics, low-level programming and AI during my years of study. |