

Prof. Dr. Rainer Kelch – Profile

Akademic Qualification and Extension Studies

- Study of *Mathematica* with subsidiary subject *Physics* at the *Elite University of Karlsruhe* with the final degree in March, 1986 as a *Diplom-Mathematiker*, main topic in *Applied Mathematics*.
- *Doctoral Examination (Thesis)* at the 12th of July, 1989 to get the academic grade of a *Doctor of science* (Dr. rer. nat.) with the topic *Ein adaptives Verfahren zur Numerischen Quadratur mit automatischer Ergebnisverifikation* (An adaptive Algorithm for Numerical Quadrature with automatic Result Verification) with Prof. Dr. U. Kulisch as examiner.
- Acceptance of post doctoral lecture qualification (*habilitationsäquivalente Leistungen*) proven by scientific publications in SAP-Architectures and UI-Technologies, and Analysis and Modelling of them.
- SAP-certified *Solution Architect* for SAP ERP in 2009 and erpSIM in 2010.

Professional Career, job-relevant Experiences and Activities

Research Assistant

- During the period of writing the doctoral thesis as scientific employee at the Institute of Applied Mathematics, University of Karlsruhe: Working as lecturer and researcher in the field of verifying Numerics, Computer Arithmetic and Extension of programming languages for scientific Computing.

Software Architect and Lecturer

- Then over 6,5 years working as employee in the software company SAP AG in Walldorf/Baden as a *Software-Developer* und *Lecturer*. First for Developing and Extending the company-own programming language ABAP Objects. Nearly all SAP-Products are based on this language.
- Then Developing and Extending the der sector specific software component "RIVA" und „ISU“ (Verbrauchsabrechnungssystem für Energieversorgungsunternehmen und Verkehrsbetriebe – Accounting System for consumption for power supplier and traffic companies) as a Project team leader for the formular generating tools and the printing workbench.

Professor, Activities at Universities

- Appointment to a professorship at the Hochschule für Technik und Wirtschaft des Saarlandes (HTWdS), Saarbrücken in 1996. In the department for Business, focus on Wirtschaftsinformatik (Business Information Systems), subject area *Mathematics* and *Wirtschaftsinformatik* in research and teaching.
- Appointment to a professorship at Augsburg, University of Applied Sciences, in 2000. Working in the Faculty of Compute Science, focus on Wirtschaftsinformatik, subject area *commercial Application Systems* in research and teaching.
- Since 2001, responsible for foreign affairs of the Faculty of Computer Science for enhancement of the international relations and for improvement of Student and professor exchange, and of research cooperation. Specially, the realisation of student projects at partner universities in abroad were offered first time and improved in the following years.
- *Guest Professor* at the HSW (University of business Administration) Lucerne, Switzerland, for the whole Summer semester 2004 in the study cours business Administration and Wirtschaftsinformatik.
- Since 2007 *Guest Lecturer* at the University of Liechtenstein, Vaduz in the Institute of Wirtschaftsinformatik for the Course *Objektorientierter Softwareentwickler*, in the Master of Science-Course in Business Process Engineering (English-Lessons) for the courses *Object Oriented Software Development* and *Business Process Implementation*.
- Since 2010 Realisation and Organisation of SAP-TERP10-certifying courses at Augsburg University of Applied Sciences, with „Solution Architect SAP ERP“ as objective. The degree serves as a proof for SAP-consultant knowledge.
- In 2010 Guest Lessons at the VIA University College Horsens, Danemark.

- Extensive practical experience as a *Lecturer* and *Consultant* in the SAP-Technology Environment at domestic and foreign companies. Since 2008 *Guidance of the AK Innovation* in the company SALT Solutions, Würzburg, in the field of SAP-Software Technology.

Research Topics

- Generic Development of Software, transformers, converters and models in the SAP-area. Automated conversion of Dialogue Applications between different UI-Technologies with respect to perpetuation of the application logic. Tools for analysis and modelling of the behaviour, and generating of screen sequence diagrams outside the application coding and vice versa.
- In the field of e-Learning the development of CBT-Programs (Computer Based Training) for Digital technique, structure and functionality of a microprocessor and SAP-Programming models, with focus on simulator to train the relevant features with this methodology with new didactical approaches.

Special Competence, Awards

- Awards for coached research project work: First Prize at the national competition of the AK „SAP-Hochschulen“ for the Theme „E-Learning BSP“, realised by a Project team, coming from Augsburg University of Applied Sciences, 2010.
- Award as a standard act of Dialogue Programming in 2009 for the book "Modellierung und Entwicklung von SAP Dialog-Anwendungen", 2nd Edition.
- Reading of a technical book concerning the Bestseller "Modellierung und Entwicklung von SAP-Dialoganwendungen", 2008.
- Award as SAP-Bestseller in 2007 for the book "Modellierung und Entwicklung von SAP Dialog-Anwendungen", 1st Edition.
- Awards for the coached Diploma thesis: Albert-Leimer-Preis for the best Diploma thesis in the region, with the title "Transformation von SAP-Anwendungen für den Einsatz auf mobilen Geräten", 2006.
- Awards for the coached Diploma thesis: Price giving of the FBTI for the best Diploma thesis in Germany in the study course Wirtschaftsinformatik, with the title "Analytische Konzeptionierung und modellhafte Realisierung eines Konvertierungsalgorithmus zur Umsetzung von SAP-Transaktionen in BSP-Applikationen", 2004.
- TV-Program: a broadcast with 30 minutes (first broadcast: 22.5.2001, since 2001 till now, more than 10 repetitions) about ABAP with R. Kelch as lecturer of a TV-program of the TV-series *Softwaretechnik* from the teaching TV-channel BR-Alpha, related to the study course *Bachelor in Wirtschaftsinformatik* of Deggendorf, university of applied sciences.
- Award for the Doctoral Thesis: Invitation for a lecture ("Numerical Quadrature with Result Verification") about the Thesis in the famous international *Mathematische Forschungsinstitut Oberwolfach* (mathematical research institut), Germany, during the International Scientific Conference *Interval Methods for Numerical Computation*, 1990.

The three most important Publications: Books

- Kelch, R.: ABAP Objects, Ein Lehr- und Trainingsbuch für die klassische und objektorientierte Programmierung, dpunkt-Verlag Heidelberg, 11/2001, about 400 pages, ISBN 3-932588-57-6
- Kelch, R.: Rechnergrundlagen - Vom Rechenwerk zum Universalrechner, Fachbuchverlag Leipzig, 1/2003, about 170 pages, ISBN 3-446-22113-1.
- Kelch, R.: Modellierung und Entwicklung von SAP-Dialoganwendungen, 2nd edition, Galileo-Press / SAP-PRESS, with Poster/Diagram, about 1019 pages, 8/2008, distinguished as a standard act for SAP-Dialogue Applications, ISBN 978-3-8362-1177-2.

Augsburg, the 27th of October 2010