

Andreas Holzinger, 2-Page Scientific Résumé, 31st March, 2015

“Science is to test crazy ideas – Engineering is to put these ideas into Business”

PERSONAL DATA:

Current Position Assoc. Prof. for Applied Computer Science (Graz Univ. of Technology)
Head Research Unit HCI (Med Uni Graz), Lead at CBmed Area 1 DATA
Lead at HCI-KDD, Head of 1st Austrian IBM Watson Think Group

Primary Address Institute for Medical Informatics, Statistics and Documentation
Medical University Graz, Auenbruggerplatz 2/V, A-8036 Graz, Austria

Second Address Institute of Information Systems and Computer Media,
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Born/Family status Austria, 18.04.1963, Nationality: Austrian; Married since 1993, two children



SUBJECT: Computer Science **TECHNICAL AREA:** Interactive Knowledge Discovery, Machine Learning

APPLICATION AREA: Biomedical Informatics, Smart Health, Personalized Medicine

ORCID: <http://orcid.org/0000-0002-6786-5194> **RID:** <http://www.researcherid.com/rid/E-9530-2010>

100-WORDS RESEARCH STATEMENT:

Smart health produces unprecedented big, complex, high dimensional and weakly structured data sets and unstructured information. Andreas and his group work consistently on a synergistic combination of methodologies and approaches of two areas that offer ideal conditions towards unraveling these problems: Human-Computer Interaction (HCI) and Knowledge Discovery/Data Mining (KDD) = interactive Knowledge Discovery, with the goal of supporting human intelligence with machine learning (“human-in-the-loop”) with the long term goal of gaining knowledge from complex data. Andreas is passionate on applying and extending methods e.g. information entropy, with user-centered software engineering methods to create interactive software and content analytics tools.

100-WORDS SHORT BIOGRAPHY:

Andreas is head of the research unit HCI-KDD at the Medical University Graz and teaches and supervises computer science students at the Faculty of Informatics and Biomedical Engineering at Graz University of Technology. He obtained a PhD in Cognitive Science from Graz University in 1998 and his Habilitation (second PhD) in Computer Science from TU Graz in 2003. Andreas was Visiting Professor in Berlin, Innsbruck, Vienna, London and Aachen and he founded the Expert Network HCI-KDD. He is Assoc. Editor of Knowledge and Information Systems (KAIS), and member of IFIP WG 12.9 Computational Intelligence. Since 2000 he participated in leading positions in 30+ R&D multi-national projects, budget 4+ MEUR, 5300+ citations, h-index =32, g-Index=116.

THREE RECENT PUBLICATIONS:

Holzinger, A., Dehmer, M. & Jurisica, I. 2014. Knowledge Discovery and interactive Data Mining in Bioinformatics - State-of-the-Art, future challenges and research directions. *BMC Bioinformatics*, 15, I1.

Holzinger, A. 2014. Trends in Interactive Knowledge Discovery for Personalized Medicine: Cognitive Science meets Machine Learning. In: *Intelligent Informatics Bulletin*, 15, (1), 6-14.

Holzinger, A. 2014. Extravaganza Tutorial on Hot Ideas for Interactive Knowledge Discovery and Data Mining in Biomedical Informatics. In: Slezak, D., Peters, J. F., Tan, A.-H. & Schwabe, L. (eds.) *Brain Informatics and Health, BIH 2014, Lecture Notes in Artificial Intelligence, LNAI 8609*. Heidelberg, Berlin: Springer, pp. 502-515.

PROFESSIONAL EMPLOYMENT HISTORY:

2012 Visiting Professor for CHI-MED, University College London, UK

2011/12 Visiting Professor for e-Health, RWTH Aachen University, Germany

2007 Visiting Professor for User-centric software design, Middlesex University London, UK

2006- Visiting Professor for Health Knowledge Management, Vienna Business University

2005/06 Visiting Professor for mobile HCI, Vienna University of Technology, Austria

2004/05 Visiting Professor for Knowledge Management, Innsbruck University, Austria

2003-2004 Technical Director of the Virtual Medical Campus Graz, Austria

2002-2003 Visiting Professor for Knowledge management at the Nations Health School, Berlin, Germany

EDUCATION:

2003	Habilitation (second PhD) in Computer Science, Graz University of Technology;
1997	PhD – Doctor of Philosophy, Cognitive Science, University of Graz with summa cum laude;
1996	MPh – Master of Philosophy in Media and Sociology, University of Graz, with distinction;
1995	MSc – Master of Science in Physics, University of Graz, with distinction;
1993	BEng – Bachelor of Electrical and Communications Engineering, Graz University of Technology;
1992	Dipl. Ed. - Diploma as Lecturer for Adult Education (Computer Programming, C and FORTRAN);
1990	CEng - Chartered Engineer for Communication Engineering;

AWARDS AND HONORS (selected):

2014	Invited Tutorial on interactive Knowledge Discovery at the WIC-Conference, Warsaw, Poland
2014	Invited Keynote on interactive Knowledge Discovery, VISIGRAPP 2014, Lisbon, Portugal
2013	Invited Keynote on Big Health Data at IBM Industrial Big Data summit, Vienna, Austria
2013	Best Paper Award, SouthCHI, Maribor, Slovenia;
2012	Invited Keynote IT-challenges Business conference, Big Data summit, TechGate Vienna, Austria;
2012	Best Paper Award at ICE-Business conference, Rome, Italy;
2012	Invited Keynote on interactive Data Mining at DATA 2012, Rome, Italy;
2011	Best Paper Award ICE-Business conference, Sevilla, Spain;
2010	Industrial Software Grant, Styrian Business Promotion Agency;
2010	Best Paper Award ICE-Business conference, Athens, Greece;
2010	Science Ideas Competition Award, Science Park, Graz

GRANTS (selected):

2015-2018	FFG K1 CBmed, MALBIODI, Adv. Machine Learning for Biomarker Discovery, PI, 540 kEUR;
2013-2014	Industry, Content Analytics in Biomedicine, PI, 92 kEUR;
2013-2014	Industry and Austrian Research Agency, EMOMES, PI, 36 kEUR;
2010-2012	Industry and Styrian Research Agency, Visualization of complex processes, PI, 54 kEUR.;
2010-2014	EU FP 7 IST-2010-248590 REACTION, 204kEUR;
2008-2011	Industry, Semantic Information Extraction from Information Systems, PI, 22 kEUR;
2009-2011	Industry and Styrian Research Agency, emendus, complexity reduction, PI, 58 kEUR
2008-2010	Industry, Austrian Research Agency (FFG), iHAND, Handwriting Algorithms, PI, 58 kEUR;
2007-2010	EU FP 6 IST-2005-2.6.2 045056 EMERGE, Emergency Monitoring/Prevention, PI, 300 kEUR;
2004-2005	Austrian Research Agency, HAEMOSIM, Haemodynamics Simulation Project, PI, 88 kEUR;
2002-2004	Austrian Ministry of Science, Virtual Medical Campus Graz, PI, 450 kEUR granted;

INTERNATIONAL RESEARCH COMMUNITY SERVICES:

Initiator and Lead of international HCI-KDD Expert Group, to bring together Science, Industry and Health Professionals; Member of the IFIP WG 12.9 Computational Intelligence; Scientific Expert for the European Research Council, Frontier Research Grants; Advisor for the Swiss national fund; Reviewer for the Agence Nationale de la Recherche (ANR), France; Scientific Advisor for the National Research Council Canada (NRC); Advisor for the Excellence Initiative of the German Government; Reviewer for the Netherlands Organisation for Scientific Research (NWO);

EDITORIAL POSITIONS (selected - last 5 years):

KAIS Knowledge & Information Systems, Board Member; Brain Informatics, Board Member; BMC Bioinformatics, Guest Editor (2013-14); Journal of Information Processing and Management, Guest Editor (2013-14); Online Information Review (OIR), Board Member; Co-chair at the 14th IEEE Intl. Conf. on Machine Learning and Applications, Miami, US; Organizer of the the 7th HCI-KDD session on Advances in interactive Knowledge Discovery and Data Mining in complex data, at the Banff International Research Station for Mathematical Innovation and Discovery, Canada;

RECENT UNIVERSITY TEACHING (selected):

2011-present	LV 709.049, 3 ECTS, Biomedical Informatics, Institute for Knowledge Discovery, TU Graz
2012-present	LV 706.315, 2 ECTS, Selected Topics on Interactive Knowledge Discovery