Gerold Hoelzl

Asst.-Prof. Dipl.-Ing. Dr. techn., BSc

Personal Information

date of birth	April 05, 1983
place of birth	Braunau, Austria
nationality	Austria

Education

07.2010–05.2015 **PhD Program in Computer Science (Dr. techn.)**, *Johannes Kepler University*, Linz, Title: *Goal Oriented Sensing in Pervasive Computing.*
Supervisor: *Univ.-Prof Dr. Alois Ferscha*
Co-Supervisor: Assoc. Prof. Anind K. Dey
Graduation passed with highest distinction.

10.2007–07.2010 **Dipl.-Ing., Computer Science**, *Johannes Kepler University*, Linz, Core Subject: Computer Science, Minor Subject: Pervasive Computing.
Graduation passed with highest distinction.

10.2003–10.2007 **B.Sc., Computer Science**, *Johannes Kepler University*, Linz.

01.2003–09.2003 **Military Service**, *Panzergrenadierbataillon 13*, Ried im Innkreis, (Tank driver).

09.1997–06.2002 **Hoehere Technische Bundeslehranstalt (technical highschool)**, *Braunau*, computer engineering (environmental monitoring and measuring technologies) branch, diploma examination passed with highest distinction.

09.1993–07.1997 **Bundes- und Bundesrealgymnasium (natural scientific branch)**, *Braunau.*

09.1989–07.1993 **Volksschule**, *Braunau.*

Additional Education

03.2011–05.2012 **Curriculum for Science and University Didactics**, *Johannes Kepler University*, Linz.

certificate **1st semester of the Cisco Networking Academy**.

certificate **National Instruments Certified Programmer (NICP) for LabView**.

PhD Thesis

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title *Goal Oriented Sensing in Pervasive Computing*

supervisor Univ.-Prof. Dr. Alois Ferscha, Assoc. Prof. Anind K. Dey

description In this thesis the goal oriented, top-down configuration of Activity and Context Recognition Systems is researched. The incredible and irresistible raise of available smart gadgets with integrated sensing capabilities made the dominant, bottom-up design approach of context aware systems antiquated. Using goal oriented methodologies, a dynamic, top-down, self-organized and autonomous (re)-configuration & orchestration of an Activity- and Context Recognition System can be achieved during runtime, eliminating the need of a predefined, static and fixed sensing infrastructure.

Master thesis

title *A personalised body motion sensitive training system based on auditive feedback*

supervisor Prof. Gabriele Kotsis

description In this thesis the architecture and functionality of a personalised body motion sensitive training system based on auditive feedback is discussed. The system supports recognition of body motion using body worn sensors and gives the user feedback about his or her current status in adaptively selecting audio files accompanying the speed and path of exercise.

Bachelor thesis

title *TrackIR - Movement analysis and interpretation*

supervisor Prof. Gabriele Kotsis

description In this thesis the control of applications using motion gestures is discussed. Therefore a vector clip and a camera is used to determine the 3D position in space of the body part used for controlling the application. A prototypical setup of the system was build controlling e.g. GoogleEarth or a presentation software like PowerPoint via hand gestures.

Employment History

08.2015–now **Assistent Professor**, *Embedded Interactive Systems Laboratory*, University of Passau.

06.2012–08.2015 **Scientific Assistant**, *Institute for Pervasive Computing*, Johannes Kepler University, Linz.

08.2010–06.2012 **Researcher**, *Institute for Pervasive Computing*, Johannes Kepler University, Linz.

2005–2010 **System designer and developer (freelancer)**, *Borbet Austria GmbH*, Braunau.
Worked alone on the development and implementation of miscellaneous applications from the scratch up (requirements, design, implementation, maintenance) for supporting the production process, e.g.

- Launching of RFID for labeling checked aluminium rims at the final inspection department. Implemented in Java the system performs a 24 hours real time labeling and registration of aluminium rims (approximately 11000 pieces per day) using laser printers and RFID for identifying the inspectors. This solved the big problem of wrong labeled rims that couldn't be traced to the persons inspected by.

- Visitor-Registration-System. Implemented in C# the system replaced the traditional time intensive, handmade registration of about 50 visitors per day. The automatic printing of ID-cards according to the entered personal information and the automatic check of company intern security policy changes since the last visit of the person as well as statistic capabilities and search options made the management of the visitors much easier and less error-prone and time intensive.

10.2002–12.2002 **Internship at Amag service GmbH**, *research and development*, Braunau, Computerized data analyzes and interpretation.

Research Interests

- Pervasive Computing & Embedded Intelligence
- Activity and Context Recognition Systems & Architectures
- Goal Oriented System Behavior
- Mobile Computing, Applications & Services
- Machine Learning & Pattern Classification
- Distributed and Autonomic Computing
- Sensor Networks
- Multimedia

Languages

German	fluent	*My native language*
English	advanced	*Speaking, reading and writing*

Hobbies

sport	running, biking, motor sports, football
technology	information technology in general, electronics
living	cars, design, nature, good food and wine, reading
other	economy, politics

ICT Skills

languages	Java, JavaME, C#, C++, C, Embedded C++, .NET, SQL, LabView, MPI, OSGi, Android, etc.
platforms	Windows, Linux, Mac OS, FreeBSD
creative tools	Adobe Photoshop, Illustrator, Premiere, Audition
office	LaTeX, different office suites (Microsoft Office, OpenOffice, iWork, etc.)

University of Passau (08.2015 - now)

Teaching

2016

- Lecture Computer Architecture (ST)
- Lecture Context Recognition Architectures (ST)
- Programming Applications for Mobile Interaction (ST)
- Masterseminar Embedded Interactive Systems (ST)

- Lecture Principles of Computer Science for Mobile and Embedded Systems (WT)
- Masterseminar Embedded Interactive Systems (WT)
- Bachelorseminar Embedded Interactive Systems (WT)

2015

- Bachelorseminar Embedded Interactive Systems (WT)
- Principles of Computer Science for Mobile and Embedded Systems (WT)

(Co-)Supervised Bachelor-/Master-Theses

- **Kategorisierung von Fahrradstrecken und Optimierung der Fahrradbenutzung mithilfe von Android unter Verwendung von externen Sensoren**, Michael Moosbauer, *Master Thesis*, in progress.
- **Potential Impact of Sponsoring on Conference Publications**, Roman Seeger, *Bachelor Thesis*, in progress.
- **Realtime Industrial Information Source Map**, Alexander Seidl, *Bachelor Thesis*, in progress.
- **Energy Efficient Sensor Nodes based on Intel Edison for Industry 4.0**, Andreas Reich, *Bachelor Thesis*, Completed 12/2016.
- **Spark2Laser: A Sketching Tool for Creating Rapid Prototypes using Laser Cutters**, Felix Huppert, *Bachelor Thesis*, Completed 10/2016.
- **Activity Recognition in Fencing**, Philipp Sadlo, *Bachelor Thesis*, Completed 08/2016.
- **Channel-Configurator for ZF-Modas**, Maximilian Steindl, *Bachelor Thesis*, Completed 07/2016.

Involvement in University Activities

- Uni Live 2017, July 7^{th}, Workshop Chair: Textinput in Virtual Reality
- Girls' Day 2017, April 27^{th}, Workshop Chair: Sketching with Hardware
- Family Day 2016, November 16^{th}, Workshop Chair: Citymodell of Passau from the LaserCutter
- Girls' Day 2016, April 28^{th}, Workshop Chair: Sketching with Hardware

Involvement in the University Organization

- Student Advisor: *Bachelor-studies Mobile and Embedded Systems* (01.10.2016-NOW)

Johannes Kepler University Linz (08.2010 - 08.2015)

Teaching

2015

- Embedded and Pervasive Systems (ST)
- Seminar in Pervasive Computing (ST)

2014

- Embedded and Pervasive Systems (ST)
- Algorithms and Datastructures I (ST)
- Practical Computer Science I (ST)

- Project Practical (ST)
- Pervasive Computing: Design and Development (WT)
- Pervasive Computing: Systems and Environments (WT)
- Pervasive Computing Teacher Education Program (WT)
- Algorithms and Datastructures II (WT)

2013

- Embedded and Pervasive Systems (ST)
- Pervasive Computing: Design and Development (WT)
- Pervasive Computing: Systems and Environments (WT)
- Pervasive Computing Teacher Education Program (WT)
- Algorithms and Datastructures II (WT)

2012

- Pervasive Computing Systems Development (ST, WT)
- Pervasive Computing Infrastructure (WT)
- Pervasive Computing Teacher Education Program (WT)

2011

- Software Development I (WT)
- Pervasive Computing Infrastructure (WT)

2010

- Software Development I (WT)

(Co-)Supervised Bachelor-/Master-Theses

- **Wrist-worn Activity Recognition Based On Smart Watches**, Peter Halbmayer, *Master Thesis*, Completed 06/2015.
- **Activity Recognition for Diagnostic Purposes in Medical Context**, Franz Keferboeck, *Bachelor Thesis*, in progress.
- **Dynamic Wi-Fi Fingerprinting Application**, Andreas Schmid, *Bachelor Thesis*, Completed 08/2014.
- **Long Time Activity Analysis using SmartWatch Sensing Capabilities**, Manuel Baumgartner, *Bachelor Thesis*, Completed 05/2014.

Workshops

- **Activity and Context Recognition**, *Tomorrow's Experts in Computing Series.*
- **Activity and Context Recognition**, *JKU Young Scientists.*

Involvement in the University Organization

- Institute Panel: *Institute for Pervasive Computing* (01.10.2013-30.09.2016)

Involvement in University Activities

- Studies-Information-Exhibition, September 2012 (SIM2012)
- Studies-Information-Exhibition, September 2013 (SIM2013)
- Teaching Mentor, *Ulrich Brandstätter*, 2013
- FIT - Woman into Technology, *Activity and Context Recognition*, 2014
- Dreamjob Technology, *How Computers understand what we are doing*, 2014

- Dreamjob Technology, *Smart Things for Activity Recognition Workshop*, 2015
- Teaching Mentor, *Bernhard Anzengruber*, 2015

Awards and Honors

-***"Upper Austrian of the Day"***, 28.06.2016, Upper Austrian News (be referred to: *UpperAustrian of the Day*)

-Nominee for the ***GI-Dissertationspreis 2015*** (awards the best German, Austrian, and Swiss PhD thesis in the field of Computer Science). For detailed information be referred to: *http://www.gi.de/wir-ueber-uns/wettbewerbe/gi-dissertationspreis.html*

-Nominee for the ***Special Award VERENA*** accompanying the bestowal of the Austrian State Award for Innovation 2016 with the Project ***PowerIT***. Only 4 out of 311 projects where nominated. *http://www.staatspreis.at*

-Invited to the ***profil High Potential Day***, Vienna Town Hall, 2014

-***Best Paper Award***, *On the Utilization of Heterogeneous Sensors and System Adaptability for Opportunistic Activity and Context Recognition*, Adaptive 2013

-***Best Paper Award***, *Goal processing and Semantic Matchmaking in Opportunistic Activity and Context Recognition Systems*, ICAS 2013

-**Evaluated 3-times *Excellent*** in the European Project *OPPORTUNITY* (2010, 2011, and 2012). The project has *fully achieved* its *objectives* and *technical goals* for the periods and has even *exceeded* expectations. It progressed in an exemplary manner and had excellent collaboration and coordination throughout. Overall, the scientific and technical production of the consortium is worthy of a full book publication.

-***Best Paper Award***, *Dynamic Adaptation of Opportunistic Sensor Configurations for Continuous and Accurate Activity Recognition*, Adaptive 2012

-***Ranked 6th*** at Jugend Innovativ 2002, a young Austrian science contest, NAFOS: iN cAre oF yOur eyeS

Referees

-***Univ.-Prof. Mag. Dr. Alois Ferscha***,
Head of the Institute for Pervasive Computing
Johannes Kepler University, Linz
Address: Altenberger Straße 69 A-4040 Linz, Austria
Phone: +43-732-2468-4762
Mail: ferscha@pervasive.jku.at

-***Assoc. Prof. Anind K. Dey***,
Charles M. Geschke Director of the Human-Computer Interaction Institute
Carnegie Mellon University, Pittsburgh
Address: 5000 Forbes Ave, Pittsburgh, PA 15213
Phone: +1-412-268-4691
Mail: anind@cs.cmu.edu

-***Assoc. Prof. Dr. Daniel Roggen***,
Sensor Technology Research Centre
University of Sussex, Falmer, Sussex
Address: RICHMOND 4-B04/5, Sussex, United Kingdom
Phone: +44-1273-877664
Mail: daniel.roggen@ieee.org

-***Prof. Dr. techn. Priv.-Doz. Andreas Riener***,
Faculty of Electrical Engineering and Computer Science
Technische Hochschule Ingolstadt
Address: Esplanade 10, 85049 Ingolstadt, Germany
Phone: +49-841-9348-2833
Mail: andreas.riener@thi.de

Memberships

-Member of the Austrian Computer Society (OCG)

-Member of ICST

Scientific Accomplishments

Associated Research Projects

-German Coordinator of the Project ***NA^{2}STY*** *(Networked Appliances, Applications and Sensing Systems for the Smart City), DAAD GE-Seed 2016/2017, University of Passau and the German University in Cairo*: The Internet of Things assumes that objects have digital functionality and can be identified and tracked automatically. The combination of high-bandwidth connectivity, the availability of Internet-based services, and ubiquitous computing allows for communication, interaction, and information access everywhere and anytime to be embedded into anything. Vehicles, devices, goods, and everyday objects become a part of the Internet of Things. The network of interconnected devices scales from the smart home to the smart city, including all infrastructures. Challenges include the design, development and implementation of suitable protocols, middleware and services in the area of networking, computing and interaction. 2016-2018

-Researcher in the Project ***PowerIT*** *(IT for Implicit Interaction based Energy Management)*: FFG Call: FIT-IT Embedded Systems & Semiconductors, 2nd Call. Goals: This project will investigate on potentials to reduce energy inefficiency by the development of methods and solutions based on implicit user interaction. Methodologically, it will attempt to exploit opportunistic sensor configurations to establish context information, in order to avoid standby losses of electronic equipment, machines and appliances. 2011-2014

-Researcher in the FP7-ICT-2007-C, Future and Emerging Technologies (FET) open European project ***OPPORTUNITY*** *(Activity and Context Recognition with Opportunistic Sensor Configurations)*, http://www.opportunity-project.eu/, 2009 - 2012. Project goal is the development of opportunistic systems that recognize complex activities/contexts despite the absence of static assumptions about sensor availability and characteristics. They are based on goal-oriented sensor assemblies spontaneously arising and self-organizing to achieve a common activity/context recognition goal. They are embodied and situated, relying on self-supervised learning to achieve autonomous operation. They make best use of the available resources, and keep working despite-or improves thanks to-changes in the sensing environment. Changes include e.g. placement, modality, sensor parameters and can occur at runtime.

-Researcher in the Project ***PowerSaver*** *(Implicit activity-based energy management)*: FFG Call: New Energies 2020. Goals: The PowerSaver research project proposes a power management solution based on sensors for activity and context recognition, in order to avoid standby losses of electronic equipment, machines and appliances. It builds on an automatic (or implicit) switching of stand-by modes of these devices, based on the recognized or anticipated situation (rather then forcing users to explicitly switch among those modes), 2008-2011

Industrial Research Cooperations

-AUDI AG, Ingolstadt, Germany

-Energie AG Upper Austria, Austria

-Borbet Austria, Ranshofen, Austria

-ZF Friedrichshafen AG, Passau, Germany

Funding

National

2017

-*DAAD*, German Academic Exchange Service, Scholarship for Conference and Lecture Journeys, PerCom 2017-WristSense Workshop, Kona, Big Island, Hawaii, USA, EUR 2.771.-

2016

-*BayIntAn*, The Bavarian Funding Programme for the Initiation of International Projects, Topic: MindAR - Understanding of Mental Models for Augmented Reality Applications, Partner: Prof. Yvonne Rogers, University College London, EUR 4.550.-

-*Teaching Innovation Pool*, Web-basierte C-Programmierung einer Modellfabrik im Kontext Industrie 4.0 mit Vernetzten und Eingebetteten Systemen, University of Passau, 24 months, EUR 12.000.-

Program Committee Member

2017

-6*th* International Conference on Smart Systems, Devices and Technologies (SMART2017), Venice, Italy, June 2017

-11*th* International Conference on Digital Society (ICDS2017), Nice, France, March 2017

-13^{th} International Conference on Autonomic and Autonomous Systems (ICAS2017), Barcelona, Spain, May 2017

2016

-4*th* International Workshop on Human Activity Sensing Corpus and Application: Towards Open-Ended Context Awareness (HASCA2016) in conjunction with UBICOMP2016, Heidelberg, Germany, September 2016

-5*th* International Conference on Smart Systems, Devices and Technologies (SMART2016), Valencia, Spain, May 2016

-12^{th} International Conference on Autonomic and Autonomous Systems (ICAS2016), Lisbon, Portugal, June 2016

-8^{th} International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE2016), Rome, Italy, March 2016

-10*th* International Conference on Digital Society (ICDS2016), Venice, Italy, April 2016

2015

-4th International Conference on Smart Systems, Devices and Technologies (SMART2015), Brussels, Belgium, June 2015

-9th International Conference on Digital Society (ICDS2015), Lisbon, Portugal, February 2015

-7^{th} International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE2015), Nice, France, March 2015

-11^{th} International Conference on Autonomic and Autonomous Systems (ICAS2015), Rome, Italy, May 2015

2014

-6^{th} International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE2014), Venice, Italy, May 2014

-10^{th} International Conference on Autonomic and Autonomous Systems (ICAS2014), Chamonix, France, April 2014

-3^{rd} International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI 2011), Workshop: Subliminal Perception in Cars, Salzburg, Austria, November 2011

Reviewer

-6^{th} International Conference on Smart Systems, Devices and Technologies (SMART2017), June 2017

-13^{th} International Conference on Autonomic and Autonomous Systems (ICAS2017), May 2017

-11^{th} International Conference on Digital Society and eGovernments (ICDS2017), March 2017

-4th International Workshop on Human Activity Sensing Corpus and Application: Towards Open-Ended Context Awareness (HASCA2016), September 2016

-12^{th} International Conference on Autonomic and Autonomous Systems (ICAS2016), June 2016

-5^{th} International Conference on Smart Systems, Devices and Technologies (SMART2016), May 2016

-10^{th} International Conference on Digital Society (ICDS2016), April 2016

-8^{th} International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE2016), March 2016

-The 34^{th} Annual CHI Conference on Human Factors in Computing Systems (CHI 2016), May 2016

-14^{th} International Conference on Mobile and Ubiquitous Multimedia (MUM 2015), November 2015

-IEEE Journal of Biomedical and Health Informatics, 2015

-4^{th} International Conference on Smart Systems, Devices and Technologies (SMART2015), June 2015

-6^{th} International Conference on Ambient Systems, Networks and Technologies (ANT-2015), June 2015

-11^{th} International Conference on Autonomic and Autonomous Systems (ICAS2015), May 2015

-7^{th} International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE2015), March 2015

-9^{th} International Conference on Digital Society (ICDS2015), February 2015

-IEEE Journal of Biomedical and Health Informatics, 2014

-The 1^{st} International Conference on IoT in Urban Space (Urb-IoT 2014), October 2014

-18^{th} International Symposium on Wearable Computers (ISWC 2014), September 2014

-22^{nd} ACM International Conference on Multimedia (MM2014), November 2014

-6^{th} International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE2014), May 2014

-10^{th} International Conference on Autonomic and Autonomous Systems (ICAS2014), April 2014

-Pervasive and Mobile Computing (PMC), Special Issue on The Social Car: Socially-inspired Mechanisms for Future Mobility Services, 2014

-MIT Presence, Special Issue on Subliminal/unaware cues and perception of presence in virtual, telepresence, and automotive environments, 2013

-Scalable Computing: Practice and Experience Special Issue - Cloud for Internet of Things (SCPE), 2013

-11^{th} International Conference on Frontiers of Information Technology (FIT2013), December 2013

-5^{th} International Conference on Mobile Computing, Applications and Services (MobiCASE), November 2013

-13^{th} International Conference on Systems Simulation (AsiaSim2013), November 2013

-5^{th} International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI 2013), October 2013

-IEEE Pervasive Computing, Special Issue on Attention Management in Pervasive Computing, 2014

-The 27^{th} International British Computer Society Human Computer Interaction Conference: The internet of things (HCI2013), September 2013

-17^{th} International Symposium on Wearable Computers (ISWC 2013), September 2013

-2013 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2013), September 2013

-9^{th} International Conference on Intelligent Environments (IE'13), July 2013

-7^{th} International Workshop on Self-Organizing Systems (IWSOS2013), May 2013

-4^{th} International Symposium on Ambient Intelligence (IsAmi'2013), May 2013

-International Journal On Advances in Intelligent Systems, Volume 5, Number 3 & 4, 2012

-4^{th} International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI 2012), October 2012

-IEEE International Conference on Systems, Man, and Cybernetics (SMC2012), October 2012

-3^{rd} International Symposium on Ambient Intelligence (IsAmi'2012), March 2012

-3^{rd} International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI 2011), December 2011

-15^{th} Portuguese Conference on Artificial Intelligence (EPIA.2011), October 2011

-7^{th} International Conference on Intelligent Environments (IE'11), July 2011

-2^{nd} International Symposium on Ambient Intelligence (IsAmi'2011), April 2011

-9^{th} International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS11), April 2011

Community Services

-*SummerCamp Computer Science 2015*, University of Passau, July 23^{rd}, 2015

-Workshop on: *Collective Adaptation in Very Large Scale Ubicomp: Towards a Superorganism of Wearables* (in conjunction with UBICOMP2015), Workshop Administration, September 7^{th}, 2015

-Mass Phenomena Experiments based on overhead camera recordings at the 32^{th} Vienna City Marathon, April 12^{th}, 2015

-2^{nd} Pervasive Computing OpenNight, IPC, JKU-Linz, Organisation Committee & Live Presentations & Demonstrations, December 11^{th}, 2014

-Raising Attention Interview: *Gerfried Stocker*, Artistic Director ARS Electronica Center, June 2^{nd}, 2014

-Raising Attention Interview: *Angelika Sery-Froschauer*, Chairwoman professional association advertising communication industry Austria, May 8^{th}, 2014

-Raising Attention Interview: *Thomas Stottan*, AUDIO MOBIL Electronics, April 28^{th}, 2014

-Mass Phenomena Experiments based on 360° Panoramic Recordings at the 31^{th} Vienna City Marathon, April 13^{th}, 2014

-Long Night of Research 2014, April 2014, Linz, Public Demonstration of SmartWatch based Implicit Energy Management

-Lead Organisation and Management of the *PowerIT*-booth at the *expoEnergy Wels 2014*, Europe's largest exhibition and trade fair for green energy and energy efficiency, February 26^{th} - March 2^{nd} 2014

-1^{st} Pervasive Computing OpenNight, IPC, JKU-Linz, Organisation Committee & Live Presentations & Demonstrations, December 12^{th}, 2013

-Human-Computer Confluence Research Challenges HC^2 Visions, Barcelona, Spain, May 16-17, 2013, *Vision Statement : Handling Invisible Devices - Goal Orientedness in Pervasive Computing*

-Crowed Density Estimation for Event Safety with additional Life Semantic Annotations at the 30^{th} Vienna City Marathon, April 14^{th}, 2013

-Opportunity Project Year 3 Final Review Meeting, *September*, 18^{th} 2012 Linz, Live Demonstration of the *Opportunity*-Framework adapted to an Energy Saving Scenario in Smart Homes

-Session Chair, 3^{rd} *International Conference on Ambient Systems, Networks and Technologies (ANT2012)*, Session: *Service Oriented Computing for Systems & Applications*, Niagara Falls, Ontario, Canada, August 2012

-Long Night of Research 2012, April 2012, Linz, Public Demonstration of Activity based Implicit Energy Management titled "Lassen Sie Abschalten"

-Sports Community Token Experiments during the 29^{th} Vienna City Marathon, April 15^{th}, 2012

-Press Conference, May 2011, Ursulinenhof Linz, PowerSaver Demonstration of Activity based implicit Energy Management, JKU, Institute for Pervasive Computing, Energie AG

-Opportunity Project Year 2 Review Meeting, *April*, 12^{th} 2011 Linz, Live Presentation and Demonstration of the *Opportunity*-Framework

Scientific Talks [12]

13.03.2017 *Size Does Matter - Positioning on the Wrist A Comparative Study: SmartWatch vs. SmartPhone.*
The Third IEEE International Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices, at the 2017 IEEE International Conference on Pervasive Computing and Communications (PerCom 2017), Kona, Big Island, Hawaii, USA.

04.05.2016 *Zielorientiertes Sensing im Pervasive Computing.*
Kolloquium zum GI-Dissertationspreis 2015, Dagstuhl, Germany.

04.08.2015 *Recognition Architectures.*
German-Austrian Doctoral Colloquium 2015 ('AlpenDC'), University of Passau, Passau, Germany.

13.09.2014 *Goal Oriented Smart Watches for Cyber Physical Superorganisms.*
Workshop on Collective Wearables: The Superorgansim of Massive Collective Wearables, at the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing, Seattle, USA.

28.07.2014 *Goal Oriented Sensing in Pervasive Computing.*
German-Austrian Doctoral Colloquium 2014, Ludwig-Maximilians-University, Munich, Germany.

27.03.2014 *On the Utilization of Smart Gadgets for Energy Aware Sensitive Behavior.*
8^{th} International Conference on Digital Society, Barcelona, Spain.

26.03.2013 *Goal Processing and Semantic Matchmaking in Opportunistic Activity and Context Recognition Systems.*
9^{th} International Conference on Autonomic and Autonomous Systems, Lisbon, Portugal.

28.08.2012 *Goal Oriented Opportunistic Recognition of High-Level Composed Activities Using Dynamically Configured Hidden Markov Models.*
3^{rd} International Conference on Ambient Systems, Networks and Technologies, Niagara Falls, Ontario, Canada.

14.06.2011 *PowerSaver - Activity-Based Implicit Energy Management.*
15^{th} Annual International Symposium on Wearable Computers, Video, San Francisco, California, USA.

13.06.2011 *A Framework for Opportunistic Context and Activity Recognition.*
9^{th} International Conference on Pervasive Computing, Video, San Francisco, California, USA.

12.06.2011 *Goal Oriented Opportunistic Sensing.*
9^{th} International Conference on Pervasive Computing, Doctoral Consortium, San Francisco, California, USA.

26.10.2009 *A personalised body motion sensitive training system based on auditive feedback.*
1^{st} Annual International ICST Conference on Mobile Computing, Applications, and Services, San Diego, California, USA.

Publications

Journals [3]

[1] Marc Kurz, Gerold Hoelzl, Alois Ferscha, Alberto Calatroni, Daniel Roggen, Gerhard Tröster, Hesam Sagha, Ricardo Chavarriaga, José del R. Millán, David Bannach, Kai Kunze, and Paul Lukowicz. The opportunity framework and data processing ecosystem for opportunistic activity and context recognition. *International Journal of Sensors, Wireless Communications and Control, Special Issue on Autonomic and Opportunistic Communications*, December 2011.

[2] Gerold Hoelzl, Marc Kurz, and Alois Ferscha. Goal oriented recognition of composed activities for reliable and adaptable intelligence systems. *Journal of Ambient Intelligence and Humanized Computing (JAIHC)*, 5(3):357–368, July 2013.

[3] Marc Kurz, Gerold Hoelzl, and Alois Ferscha. Enabling dynamic sensor configuration and cooperation in opportunistic activity recognition systems. *International Journal of Distributed Sensor Networks*, 2013:13, June 2013.

Conferences [19]

[1] Gerold Hoelzl. A personalised body motion sensitive training system based on auditive feedback. In Thomas Phan, Angela Montanari, and Petros Zerfos, editors, *Proceedings of the* 1^{st} *Annual International ICST Conference on Mobile Computing, Applications, and Services (MobiCASE09)*, volume 35 of *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*, San Diego, California, USA, October 26-29 2009. ICST, Springer. ISBN: 978-3-642-12606-2.

[2] Ricardo Chavarriaga, Hesam Sagha, Hamidreza Bayati, Jose del R. Millan, Daniel Roggen, Kilian Foerster, Alberto Calatroni, Gerhard Troester, Paul Lukowicz, David Bannach, Marc Kurz, Gerold Hoelzl, and Alois Ferscha. Robust activity recognition for assistive technologies: Benchmarking machine learning techniques. In *Workshop on Machine Learning for Assistive Technologies at the Twenty-Fourth Annual Conference on Neural Information Processing Systems (NIPS-10)*, Whistler, British Columbia, Canada, December 10-11, 2010.

[3] Gerold Hoelzl. Goal oriented opportunistic sensing. In *9th International Conference on Pervasive Computing (Pervasive2011), Doctoral Consortium, San Francisco, CA, USA*, June 2011.

[4] Gerold Hoelzl, Marc Kurz, Alois Ferscha, Daniel Roggen, Alberto Calatroni, Gerhard Tröster, Ricardo Chavarriaga, José del R. Millán, Hesam Sagha, Paul Lukowicz, and David Bannach. A framework for opportunistic context and activity recognition. In *9th International Conference on Pervasive Computing (Pervasive2011), San Francisco, CA, USA*, June 2011.

[5] Marc Kurz, Gerold Hoelzl, Alois Ferscha, Alberto Calatroni, Daniel Roggen, and Gerhard Troester. Real-time transfer and evaluation of activity recognition capabilities in an opportunistic system. In *Third International Conference on Adaptive and Self-Adaptive Systems and Application, September 25-30, Rome, Italy*, 2011.

[6] Marc Kurz, Gerold Hoelzl, Alois Ferscha, Hesam Sagha, José del R. Millán, and Ricardo Chavarriaga. Dynamic quantification of activity recognition capabilities in opportunistic systems. In *Fourth Conference on Context Awareness for Proactive Systems: CAPS2011, 15-16 May 2011, Budapest, Hungary*, May 2011.

[7] Daniel Roggen, Alberto Calatroni, Kilian Förster, Gerhard Tröster, Alois Ferscha, Marc Kurz, Gerold Hoelzl, Paul Lukowicz, David Bannach, Hesam Sagha, Hamidreza Bayati, José del R. Millán, and Ricardo Chavarriaga. Activity recognition in opportunistic sensor environments.

In *The European Future Technologies Conference and Exhibition (FET11), 4-6 May, Budapest, Hungary*, page 2, May 2011.

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