

# SEPPO HEIKKILÄ

“Doctor in technology looking for research and development challenges in innovative IT and automation projects requiring software or hardware expertise.”

## PERSONAL INFORMATION

Surname, Forenames  
Address  
E-mail, Telephone  
Nationality, Date of birth

**HEIKKILÄ, SEPPO SAKARI**  
Rue des délices 5, 1203 Genève, Switzerland  
Seppo.Heikkila@iki.fi, +41 78 6673977  
Finnish, 08.10.1979

## WORK EXPERIENCE

Area:  
Position:  
Responsibilities:

02.2012 – 06.2012  
**Helsinki Institute of Physics (HIP) at European Organization for Nuclear Research (CERN)**,  
Geneva, Switzerland  
Grid/cloud computing  
Postdoctoral researcher  
Development of secure and redundant cloud-based file storage software (Java).

Area:  
Position:  
Responsibilities:

01.2003 – 08.2005, 09.2006 – 01.2012  
**Finnish Centre of Excellence in Generic Intelligent Machines Research (GIM),  
Department of Automation and Systems Technology, Aalto University**, Espoo, Finland  
Robotics, mechatronics, and control of industrial processes  
Researcher (04.2005 onwards), Research Assistant  
Researcher: Doctoral studies in the field of human-robot interaction and a course assistant in the Erasmus Mundus SpaceMaster program (spacemaster.eu). Instructor of five M.Sc. theses.  
Research Assistant: robot control softwares, HW and PCB design, ucontrollers, indoor personal navigation system (Master's thesis), course assistant (automation fundamentals).

Area:  
Position:  
Responsibilities:

01.2008 – 09.2008  
**Automation and Robotics group, European Space Research and Technology Centre (ESTEC), European Space Agency (ESA)**, Noordwijk, The Netherlands  
Automation and robotics  
Ph.D. student (within ESA NPI programme)  
Research on robotic astronaut assistants.

Area:  
Position:  
Responsibilities:

05.2002 – 08.2002  
**3G protocol software team, Nokia Networks**, Oulu, Finland  
Mobile phone network infrastructures  
Trainee  
Programming with C, software design (UML-charts), and evaluation of real-time SQL-databases.

## EDUCATION AND TRAINING

Organisation:  
Subject:  
Degree:

09.1999 – 03.2005, 10.2006 – 12.2011  
**Aalto University** (previously Helsinki University of Technology), Espoo, Finland  
Ph.D. programme in Automation and Systems Technology. Thesis: “Affordance-Based Task Communication Methods for Astronaut-Robot Cooperation”.  
M.Sc. programme in Electrical Engineering (average 4.1/5). Major subject: Space Technology, 1st minor subject: Software Systems, and 2nd minor: Automation and Control Technology.  
Doctor of Science in Technology (2011), Master of Science in Technology (2005)

Organisation:  
Subject:  
Degree:

09.2005 – 09.2006  
**International Space University**, Illkirch-Graffenstaden, France.  
Degree programme in space studies including technical, financial and legal aspects (average 80/100). Internship at SES Astra SA (Betzdorf, Luxembourg) with satellite receiver localisation.  
Master of Science in Space Studies

<b>PERSONAL SKILLS AND COMPETENCES</b>	
LANGUAGES	
Finnish	Mother tongue
English	Excellent (reading/writing/verbal)
Swedish	Good (reading/writing) + Satisfactory (verbal)
French, Spanish	Satisfactory (reading/writing) + Basics (verbal), three courses of French and four of Spanish
German, Portuguese	Basics (reading/writing/verbal), half a year course of both
COMPUTER LANGUAGES	
<b>C/C++</b>	Excellent; several database, control system and graphics software projects (10 years)
Matlab/Octave	Very Good; data processing, Simulink modeling and neural computing projects (7 years)
SQL	Very Good; web page database and client database projects with my/PostgreSQL (9 years)
Java	Very Good; cloud-based file storage, mail-client, database and webpage projects (5 years)
Visual Basic	Good; several small scripts and data acquisition project (2 years)
Assembler	Satisfactory; operating system development and microcontroller programming (2 years)
Latex	Excellent; several publications, Ph.D., master's thesis, etc. (10 years)
HTML, PHP	Excellent, Very Good; webpage development (10 years)
Bash, Perl	Very Good, Good; numerous server maintenance scripts (8 years)
Ada, Ruby	Poor; free time practice with sample programs (1 month)
OPERATING SYSTEMS	
<b>Linux</b>	Excellent; especially with Debian, Ubuntu, Gentoo, and Maemo distributions (10 years)
Unix	Very good; experienced user (8 years)
Windows	Excellent; used since Windows 3.1 (16 years)
SOFTWARES	
Computing	Matlab, Simulink, GNU Octave, Mathematica, Maple, R, SPSS, Blender, Solidworks
Programming	Eclipse, Ant, Maven, Vaadin, Emacs, Autotools, CMake, CMSs (Joomla, Drupal, WordPress)
Space and automation	STK, LinkBudget, AVR Studio, Eagle layout editor, dSpace TargetLink, Controldesk, LabVIEW
Office	MS/OpenOffice, MS Project, LyX, Gimp, Inkspace, Dia, Photoshop, Adobe Premiere
OTHER TECHNICAL SKILLS	<ul style="list-style-type: none"> <li>- Experience with electronics, for example with Atmel's AVR series.</li> <li>- Programming and robotics familiar through school, work and hobbies.</li> <li>- Vehicle development from full system simulation model to an embedded vehicle with dSPACE.</li> </ul>
SOCIAL SKILLS AND COMPETENCES	<ul style="list-style-type: none"> <li>- Participation to intercultural European Space Agency's Outreach Programs; IAC conferences (2002, 2004), Student Parabolic Flight Campaign (2003), Aurora Design Contest (2003).</li> <li>- Active practice of Capoeira and Karate (participation to workshops and etc.).</li> </ul>
ORGANISATIONAL SKILLS AND COMPETENCES	<ul style="list-style-type: none"> <li>- Instructor of five M.Sc. theses, two B.Sc. theses, and several project works.</li> <li>- President (2004) and secretary (2003) of Student Unions sport sub-organization PoliTaido.</li> <li>- One-year military service in Kainuu Brigade (1998), group leader.</li> </ul>
ARTISTIC SKILLS AND COMPETENCES	<ul style="list-style-type: none"> <li>- Web page development (e.g. <a href="http://mielipiteet.fi">http://mielipiteet.fi</a>, <a href="http://picsurl.com">http://picsurl.com</a>), OpenGL programming.</li> <li>- PADI certified "open water diver" (ISO 24801-2), kitesurfing/snowkiting, windsurfing, snowboarding, acrobatics, Capoeira.</li> </ul>
PUBLICATIONS	<p>20 publications: 12 peer reviewed articles, 8 abstracts (see additional information for details)</p> <p>[ 1 ] Heikkilä S.S., Halme A., "Indirect Human-Robot Task Communication Using Affordances", Proc. of the 20th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), Atlanta, USA, 2011. 🌟 Ro-Man 2011 best paper award winner!</p> <p>[ 2 ] Heikkilä S.S., Halme A., Schiele A., "Affordance-Based Indirect Task Communication for Astronaut-Robot Cooperation", <i>Journal of Field Robotics</i>, 2012.</p>
ADDITIONAL INFORMATION	<a href="http://iki.fi/seppo.heikkila">http://iki.fi/seppo.heikkila</a>