



Application from	Heikkila, Seppo Sakari
Job	Fellowship and GET Programmes / Programme des Boursiers et GET / AFC-2012-2/FELL
Application date	02/09/2012 23:49

Personal Details

Title	Doctor
Family Name	Heikkila
First Name(s)	Seppo Sakari
Maiden Name (if applicable)	
Marital Status	Married / Marié(ée)
Gender	Male / Homme
Date of birth	08/10/1979
Nationality	Finnish (FI)
Second Nationality (if applicable)	
Country of Birth	FINLAND
Place of Birth	Oulu

Home Address

Home Address (line 1 - max 32 chars)	5 Rue des delices
Home Address (line 2 - max 32 chars)	
City	Geneva
Country	SWITZERLAND
Postal Code	1203
E-Mail Address	seppo.heikkila@iki.fi
Telephone Number (home)	+358504137550
Telephone Number (mobile)	+41786673977
Telephone Number (office)	
Fax Number	

Correspondence Address (if different from above)

Address for Correspondence (line 1 - max 32 chars)	
Address for Correspondence (line 2 - max 32 chars)	
City	
Country	
Postal Code	
Correspondence Address Valid Until (dd/mm/yyyy)	
Have you previously applied for a position at CERN? If yes, please give details (date, position etc.)	2012.01.25, Staff, "Spontaneous application in Information Technology & Computing" 2012.07.11, Staff "Applied Physicist or Engineer"
Are you working, or have you worked at CERN before? If yes, please give details (dates, position etc)	No.
Are you working for or have you worked for a firm on the CERN site? If yes, please give the name of the firm.	I worked at CERN in the office of Helsinki Institute of Physics (HIP) from February 2012 to June 2012. I was responsible of developing secure and redundant cloud-based file storage.

Please give your date of leaving, if you have worked at CERN previously	30/06/2012
Please give your CERN ID number (if applicable)	122229
How did you learn about job or training opportunities at CERN?	CERN Website
Main field of Interest/Study	Computing / Informatique
If Other, please specify	Embedded systems, control systems, and usability.

Miscellaneous Information

Please give details of the work you are interested in doing at CERN	I am interested in challenges related to information technology and automation, e.g. redundant file storage, control of complex systems, data acquisition and storage.
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What is the motivation for your application?

What is the motivation for your application? Note: Applicants for Fellowships and Student Programmes are particularly encouraged to complete this section explaining what they hope to achieve at CERN and their interest in this programme.	I finished recently my Ph.D. and I am looking for further challenges in my career. CERN is certainly one of the best places in the world to find such demanding work challenges. I am sure that by working in CERN I can strengthen my expertise and become a leader in my field. I have worked already few months in the CERN premises and it was a great experience that I would like to repeat.
Remarks - Please add any other relevant information in support of your application. This may include reference number from advertisement, information about visits abroad or military or civil service, for example.	

Family Details

Family Name	Jimenez Monroy
First Name(s)	Cynthia
Relationship to you	Spouse / Epoux(se)
Gender	Female / Femme
Date of Birth	15/03/1975
Nationality	Mexican (MX)
Will they accompany you?	Yes / Oui

Education

Country	FINLAND
Education Level	FINLAND - Tohtori
Title of Diploma/Qualification Note: Please give the full title in their original language.	Tekniikan tohtori (Doctor of Science in Technology)
Attended From	09/2006
Attended To	12/2011
School/University Name	Aalto University (former Helsinki University of Technology)
The qualification is...	Obtained
Grades/Dates Obtained/Expected	Degree obtained on 15th of December 2011.

Country	FRANCE
Education Level	FRANCE - Master 1

Title of Diploma/Qualification Note: Please give the full title in their original language.	Master of Science in Space Studies
Attended From	09/2005
Attended To	08/2006
School/University Name	International Space University
The qualification is...	Obtained
Grades/Dates Obtained/Expected	Overall grade: 80 (out of 100)

Country	FINLAND
Education Level	FINLAND - Diplomi-Insinööri
Title of Diploma/Qualification Note: Please give the full title in their original language.	Diplomi-insinööri (Master of Science in Technology)
Attended From	09/1999
Attended To	03/2005
School/University Name	Aalto University (former Helsinki University of Technology)
The qualification is...	Obtained
Grades/Dates Obtained/Expected	Overall grade: 4.1 (out of 5)

Country	FINLAND
Education Level	FINLAND - Ylioppilas
Title of Diploma/Qualification Note: Please give the full title in their original language.	Ylioppilas (secondary school graduate)
Attended From	09/1995
Attended To	05/1998
School/University Name	Oulunsalon lukio
The qualification is...	Obtained
Grades/Dates Obtained/Expected	Overall grade: 8.2 (out of 10)

Languages

Mother Tongue	Finnish
If Other, please specify	

Other Languages	
1st Language	English
Reading	Very Good / Très bon
Writing	Very Good / Très bon
Speaking	Very Good / Très bon
2nd language	French
Reading	Good / Bon
Writing	Fair / Passable
Speaking	Fair / Passable
3rd Language	Spanish
Reading	Good / Bon
Writing	Fair / Passable
Speaking	Fair / Passable

Computer Knowledge

Word Processing	Yes / Oui
Please give details	I have used frequently Microsoft Office and OpenOffice at work. I have written all my theses and publications with LaTeX.
Other Software Packages	Yes / Oui

Please give details	Computing software: Matlab, Simulink, GNU Octave, Mathematica, Maple, R, SPSS, Blender, Solidworks. Programming software: Eclipse, Ant, Maven, Vaadin, Emacs, Autotools, CMake, CMSs (Joomla, Drupal, WordPress). Automation software: AVR Studio, Eagle layout editor, dSpace TargetLink, ControlDesk, LabVIEW. Office software: MS/OpenOffice, MS Project, LyX, Gimp, Inkspace, Dia, Photoshop, Adobe Premiere.
Computer Languages	Yes / Oui
Please give details	C/C++ 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, mySQL, PostgreSQL (9 years). Java Very Good; cloud-based file storage client, 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, master's thesis, etc. (6 years). HTML, php Excellent, Very Good; webpage development (10 years). Ada Poor; free time practice with sample programs (1 month).
Computer Hardware	Yes / Oui
Please give details	I have used embedded computer hardware (e.g. PC/104 industrial computers, Atmel AVR series, Ampro ReadyBoards, and dSPACE boards) and the traditional desktop and laptop computer hardware (x86 architecture).
Operating Systems	Yes / Oui
Please give details	Linux Excellent; Especially with Debian, Ubuntu, Gentoo, and Maemo distributions (9 years). Unix Good; Experienced user (8 years). Windows Excellent; Used since Windows 3.1 (13 years).

Employment

Joining and Leaving Dates - From	02/2012
Date to	06/2012
Name of your Employer	Helsinki Institute of Physics (HIP) @ CERN
Title of your Position	Postdoc researcher
Job Description	I was responsible of developing secure and redundant cloud-based file storage software. The software was based on open-source components, many which were from the European Middleware Initiative (EMI). A working prototype was completed and the project waits for further funding decisions. I was located at HIP's office at CERN.
Joining and Leaving Dates - From	01/2008
Date to	09/2008
Name of your Employer	European Space Agency
Title of your Position	Ph.D. student
Job Description	I was on a researcher exchange through ESA Network Partnering Initiative (NPI) programme. I worked on tasks related to my Ph.D. thesis, i.e. on astronaut-robot communication interfaces.
Joining and Leaving Dates - From	01/2003
Date to	01/2012

Name of your Employer	Automation technology laboratory
Title of your Position	Researcher
Job Description	<p>The following are the main projects that I participated to, in a chronological order:</p> <p>1) I developed a control software for a research robot. The project included also hardware design and a development of a microcontroller based I/O -card.</p> <p>2) As my M.Sc. thesis, I developed a "indoor human navigation system" as a part of a EU FP5 project called "PeLoTe". I also worked as a course assistant in an "automation fundamentals"-course.</p> <p>3) I participated to the development of a drive control software for a eight wheel electrical vehicle which weighted 16 tons.</p> <p>4) I did Ph.D. studies in the field of human-robot interaction, worked as a project manager in a ESA project called "SpacePartner", and acted as a course assistant in the "Erasmus Mundus SpaceMaster"-programme.</p>

Specific Information (Fellows)

During your stay at CERN, would you receive financial support from other sources?	No / Non
If so, please state the amount and in which currency paid	
Awarded/Paid By	
For what period would you like to work at CERN (dd/mm/yyyy)?	
From	01/01/2013
To	31/12/2015
What type of scientific work are you interested in?	Computing / Informatique
List of (up to 5) most important publications in refereed scientific journals: reference, title. In each case summarize in 2 lines maximum your personal contribution.	<p>Heikkilä S. S., Halme A., Schiele A., "Affordance-based indirect task communication for astronaut-robot cooperation", Journal of Field Robotics, vol. 29, pages 576-600, July-August 2012. Contribution: Designing, implementation, and documentation of the experiments.</p> <p>Näränen, J., Kaasalainen, S., Peltoniemi, J., Heikkilä, S.S., Granvik, M. and Saarinen, V. "Laboratory photometry of planetary regolith analogs. II. Surface roughness and extremes of packing density", Astronomy and Astrophysics Journal, vol. 426(3), pp. 1103-1109, 2004. Contribution: Performing experiments in a near zero gravity on a ESA parabolic flight campaign. Documentation.</p>
Please indicate the type of Fellowship for which you wish to be considered	Applied science / engineering / computing
For PhD holders and PhD students: Specify submission date, defence date, title of thesis and name of your supervisor; summarize your thesis in maximum 5 lines; give the most significant results obtained.	<p>Submission date: 01.06.2011 Defense date: 18.11.2011 Title of thesis: "Affordance-Based Task Communication Methods for Astronaut-Robot Cooperation" Supervisor: Prof. Aarne Halme The thesis examined how to facilitate human-robot task communication by utilising object-action relationships in the task communication. The proposed approach was found to decrease both the human workload and task communication times, while being also a preferred way to communicate.</p>
For Research Fellow candidates in Experimental Physics:	
List up to 3 experiments that you have participated in. In each case summarize in 2 lines your main contribution (other than your PhD)	

For Research Fellow candidates in Experimental Physics: Optionally: List of up to 5 public or internal notes to which you have contributed personally. Indicate the number of authors.	
For Research Fellow candidates: List of (up to 5) presentations at international Conferences (specify talk or poster) or workshops: conference name, date, title of the talk	<p>Heikkilä S.S., Halme A., "Indirect Human-Robot Task Communication Using Affordances", Proceedings of the 20th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), Atlanta, USA, August 2011. Won the best paper award in the conference! Presentation type: talk in a conference.</p> <p>Heikkilä, S.S., Halme, A. and Schiele, A. "Human-Human Inspired Task and Object Definition for Astronaut-Robot Cooperation", Proc. of the 10th International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS), 2010. Presentation type: talk in a conference.</p> <p>Heikkilä, S.S. "The Role of Natural Interaction in Astronaut-Robot Cooperation", Proc. of the 61st International Astronautical Congress (IAC), 2010. Presentation type: talk in a conference.</p> <p>Heikkilä, S.S., Didot, F. and Halme, A., "Centaur-type service robot technology assessment for astronaut assistant development", Proc. of the 10th ESA Workshop on Advanced Space Technologies for Robotics and Automation (ASTRA), 2008. Presentation type: talk in a workshop.</p> <p>Saarinen, J., Suomela, J., Heikkilä, S.S., Elomaa, M. and Halme, A. "Personal Navigation System", Proc. of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2004. Presentation type: talk in a conference.</p>
For Research Fellow candidates: Statement of Research Interest (max 15 lines)	<p>In general, I am interested to work with IT and automation projects. Most recently I worked with a secure and redundant cloud-based file storage software (RAIN, erasure coding, cloud APIs, Shibboleth authentication). I have previously worked also with embedded systems, data acquisition, control systems, and usability.</p>

First Referee

Full Name	Aarne Halme
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Second Referee

Full Name	Miika Tuisku
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Third Referee

Full Name	Frédéric Didot
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Institute & Town	Automatic and Operations Unit European Space Research and Technology Centre European Space Agency Keplerlaan 1 2200 AG Noordwijk The Netherlands
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