Expression of supervisor’s interest to host
Marie Skłodowska-Curie Individual Fellows at the University of Ljubljana (UL)

Prof. IGOR ŠKRIJANC from University of Ljubljana is searching for a top-class experienced researcher of any nationality interested in developing collaborative MSCA IF application for the following EU Framework Programme for Research and Innovation Horizon 2020 actions:

- Marie Skłodowska-Curie Individual Fellowships – European (MSCA-IF-2016-EF)
- Marie Skłodowska-Curie Individual Fellowships – Global (MSCA-IF-2016-GF)

ELIGIBILITY CRITERIA FOR MSC FELLOWS

- The researcher must, at the deadline for the submission of proposals, be in possession of a doctoral degree or have at least four years of full-time equivalent research experience. The researcher may be of any nationality.
- Mobility rule: the researcher must not have resided or carried out his/her main activity (work, studies) in the country of the host organisation for more than 12 months in the 3 years immediately prior to the deadline for submission of proposals.

OPPORTUNITIES FOR POTENTIAL CANDIDATES – RESEARCHER’S CAREER DEVELOPMENT

The goal of MSCA Individual Fellowships is to enhance the creative and innovative potential of experienced researchers (post-doctoral or with 4 years of equivalent research experience) wishing to diversify their individual competence in terms of skill acquisition through advanced training, international and intersectoral mobility. The researcher and supervisor will develop the application jointly. The project proposals will be submitted by the host organization. If the application will be successful, the IF researcher will be recruited under an employment contract with a monthly salary of 4.650 €* coefficient of the country where the researcher is hosted (living allowance) + 600 € (mobility allowance) + 500 € (family allowance) per month. More information may be found here.

University of Ljubljana offers stimulating environment for postdoctoral research providing modern core facilities in a supported environment with on-the-job training and supervision. In addition, postdoctoral researchers will have access to the generic and transferable skills trainings, they will have the possibility to be involved in educational process and if suitable, they will be seconded to industry all with the purpose for further development of their careers in the academic and non-academic sector.

Researchers who wish to cooperate with UL for the submission of a project proposal under the aforementioned Actions should check that they fulfil the respective eligibility criteria and then send an expression of interest, consisting of a CV and a two-page summary presentation of their research proposal by 18 March 2016. Proposals will be pre-selected based on internal evaluation and the availability of suitable supervision. Candidates will be informed of the results of the pre-selection by 25 March 2016.

Selected candidates will be invited to meet the supervisor and visit the research environment of the university within the 2-day MSCA-IF proposal writing workshop in Ljubljana organised by UL at the end of May 2016.

UNIVERSITY OF LJUBLJANA

University of Ljubljana (Univerza v Ljubljani, UL) was founded in 1919 and is the oldest and largest higher education and scientific research institution in Slovenia. It encompasses 23 faculties and 3 art academies and has more than 40.000 undergraduate and postgraduate students and approximately 5.600 employees. UL is listed amongst the top 500 universities in the world according to the ARWU Shanghai, Times THES-QS and WEBOMETRICS rankings. UL is very active in national and international R&D and educational programmes, and creates almost half of the research results of Slovenia. In the period 2007-2013 UL cooperated in 745 EU projects, including 163 FP7 projects, which places UL on the first place among the organisations in the EU 13 member states. The University of Ljubljana has close ties with many excellent Slovenian and foreign companies. In May 2015, UL founded the Slovenian Innovation Hub, which will operate mainly as a facilitator and promoter of development and research teams in the academic and business sphere. UL is also founder of the University incubator, the Institute for Research and Innovation, and very recently the SMUL network - a global alumni and associates network. From 2008 UL is committed to respect the principles of the European Charter for Researchers and the Code of Conduct for Recruitment of Researchers, which led to the EC given UL the right to use the logo ‘HR Excellence in Research’ in 2013.
NAME OF THE SUPERVISOR: IGOR ŠKRJANC
MAIN RESEARCH FIELD: MODELLING, IDENTIFICATION, OPTIMIZATION
E-MAIL address: igor.skrjanc@fe.uni-lj.si
LINK to SUPERVISOR’s CV: http://msc.fe.uni-lj.si/Staff.asp?person=7

DESCRIPTION OF THE SUPERVISOR (max. 200 words)
(Describe important research experience, education, current and previous positions, institutional responsibilities, awards, experiences in supervision, teaching and organisation (esp. international), major collaboration, important international research projects. Add your personal picture if possible.)

Igor Škrjanc received B.S., M.S. and Ph.D. degrees in electrical engineering, in 1988, 1991 and 1996, respectively, at the Faculty of Electrical and Computer Engineering, University of Ljubljana, Slovenia. He is currently a Full Professor with the same faculty and Head of Laboratory for Autonomous and Mobile Systems. He is lecturing the basic control theory at graduate and advanced intelligent control at postgraduate study. His main research areas are adaptive, predictive, neuro-fuzzy and fuzzy adaptive control systems. His current research interests include also the field of autonomous mobile systems in sense of localization, direct visual control and trajectory tracking control. He has published 81 papers with SCI factor and 27 other journal papers. He is co-author and author of 11 chapters in international books and co-author of scientific monograph with the title Predictive approaches to control of complex systems published by Springer. He is also author and co-author of 226 conference contributions, 31 lectures at foreign universities. He is also mentor at 5 PhD thesis, 3 Msc thesis and 34 diploma works. And co-mentor of 2 PhD thesis and 1 MSc thesis. He is author of 6 university books, 24 international and domestic projects and 4 patents. In 1988 he received the award for the best diploma work in the field of Automation, Bedjaníč award, in 2007 the award of Faculty of Electrical Engineering, University of Ljubljana, Vodovnik award, for outstanding research results in the field of intelligent control, in 2012 the 1st place at the competition organized by IEEE Computational Society, Learning from the data in the frame of IEEE World Congress on Computational Intelligence 2012, Brisbane, Australia: Solving the sales prediction problem with fuzzy evolving methods, and in 2013 the best paper award at IEEE International Conference on Cybernetics in Lausanne, Switzerland. In 2008 he received the most important Slovenian research award for his work in the area of computational intelligence in control – Zois award. In year 2009 he received a Humboldt research award for long term stay and research at University of Siegen. He is also a member of IEEE CIS Standards Committee, IFAC TC 3.2 Computational Intelligence in Control Committee and Slovenian Modelling and Simulation society and Automation Society of Slovenia. He also serves as an Associated Editor for IEEE Transaction on Neural Networks and Learning System, IEEE Transaction on Fuzzy Systems, the Evolving Systems journal and International journal of artificial intelligence.

RESEARCH FIELD OF THE SUPERVISOR
Main research field: MODELLING, IDENTIFICATION, OPTIMIZATION
Sub-fields: IDENTIFICATION, AUTONOMOUS AND INTELLIGENT SYSTEMS

RECENT TRACK-RECORD and other SIGNIFICANT ACHIEVEMENTS
(List 3-5 publications in major international/leading peer reviewed journals relevant for the scientific field in which you would like to develop the project application with the post-doc researcher. Consider also patents or other significant achievements)

RESEARCH ENVIRONMENT

FACULTY/DEPARTMENT/LABORATORY
(Describe briefly the faculty/department/laboratory, where the researcher will be employed, including the research team expertise)

Research work is oriented to the theory and application of modern methods of computer control as well as to the modelling and simulation of dynamic processes. Beside traditional approaches, adaptive, predictive and multivariable systems are studied together with AI approaches based on fuzzy logic, neural networks and expert systems. Recent investigations deal also with discrete-event and hybrid systems. Multiagent systems are intensively studied and applied to autonomous mobile systems. The mentioned methods are transferred to different fields where complex control systems can be applied as well as to some interdisciplinary areas (chemical engineering, power plants, intelligent buildings, biopharmaceutics and pharmacogenomics, biomedicine etc.).

RESEARCH INFRASTRUCTURE
(Describe significant internal or external research infrastructure, including e-infrastructure if relevant, accessible to the MSC fellows)

All necessary research infrastructure is available and even some real-time experiments will be possible, because we have a lot of connections with the industry where the experiments could be performed.

ACADEMIC AND NON-ACADEMIC COLLABORATION
(Describe briefly your involvement in important international networks and projects, highlighting the interdisciplinary collaborations and transfer of knowledge. Describe significant collaborations with other stakeholders highlighting the secondment opportunities for MSC fellows to industry/SMEs/NGOs/institutes if relevant.)

Our laboratory participate in the following important networks:

- Technology network Process control technology (PCT)
- Competence Centre for Advanced Control Technologies (CCACT)
- Slovenian Centre of Excellence for Space Sciences and Technologies Space-SI
- Members of the Center for Functional Genomics and Bio-Chips - CFGBC

The members of our group were actively included into organization of many international conferences:

- 6th EUROSIM Congress on Modelling and Simulation, 458 participants from 42 countries, Ljubljana, Slovenia, 2007.

Leadership of important domestic projects (head):

- Competence Center for Advanced Control Technologies – CC ACT (2011-2013), head
- Monitoring and Control of Steel Melt Quality in Electric Arc Furnace (domestic basic project for Slovenian Research Agency, 2010-2012, head
- Research programm: Modelling, simulation and control, domestic basic reseach programme fo Slovenian Research Agency, 2009-2014, head

Important international projects and grands (collaboration, individual grands and head of the projects):

- 1993: Technical University, Delft, Netherlands, individual grand, Tempus
- 1991-94: Technische Hochschule, Darmstadt, Germany, KFI Juelich
- 1995: University of Glasgow, Glasgow, individual grand,TEMPUS
- 1996: Technische Hochschule, Darmstadt, Germany, bilateral project
- 1997: University of Glamorgan, Pontypridd, Tempus
• 1997: Technical University, Delft, Nizozemska, individual grand, Tempus
• 1998: Adersa, Paris, Project Dyncomans
• 1998-2002: Fakultet za elektrotehniko i mašinstvo, Tuzla, BiH, Implementation of modern Control algorithms on PLCs, bilateral project, head
• 1999-2002: Aspect projekt, 5th EU farmework, head
• 1999-2002: Universidad Nacional del Sur, Bahia Blanca, Argentina, Identification and Control of Dynamical System, bilateral project, head
• 2000: Universidad Nacional del Sur, Bahia Blanca, Argentina, bilateral project, head
• 2000-2003: Universidad Nacional del Sur, Bahia Blanca, Argentina, Identification and Control of Dynamical System, bilateral project, head
• 2000-2003: Universidad Nacional del Sur, Bahia Blanca, Argentina, Identification and Control of Dynamical System, bilateral project, head
• 2005: Universidad de Chile, visiting researcher
• 2006: Advanced Algorithms for Adaptive Fuzzy Control Systems Design, bilateral project with Czech Republic, head
• 2006-2004: Adersa, Paris, Multivariable predictive control, bilateral project, head
• 2005: Universidad Nacional del Sur, Bahia Blanca, Argentina, bilateral project, head
• 2006: ASO Office - Austrian Science and Research Liaison Office, Technical University of Vienna, individual grand
• 2007: DAAD grand for experienced researchers, University of Siegen, individual grand
• 2007: Universidad de Chile, visiting researcher
• 2008-10: Alexander von Humboldt research grand for research at University of Siegen, Germany
• 2009-2011: Fakultet za elektrotehniko i mašinstvo, Tuzla, Bosnia and Herzegovina, Modelling, simulation and control, head
• 2010-11: Modern Control Technologies for Improving Competitiveness subsidized by European Found for Regional Development, head
• 2010-11: Advanced Algorithms for Adaptive Fuzzy Control Systems Design, bilateral project with Czech Republic, head
• 2010-11: Control over Network, bilateral project with Bosnia and Herzegovina, head
• 2011-2013: Competence center for Control Technologies, coordinator of project at FE
• 2011-2013: E-learning in the field of modelling, simulation and control system design, bilateral project with Austria, head
• 2011-2013: Competence center for Control Technologies, coordinator of project at FE
• 2011-2013: Competence center for Control Technologies, coordinator of project at FE
• 2011-2013: Competence center for Control Technologies, coordinator of project at FE
• 2011-2013: Competence center for Control Technologies, coordinator of project at FE
• 2011-2013: Competence center for Control Technologies, coordinator of project at FE
• 2011-2013: Competence center for Control Technologies, coordinator of project at FE
• 2014: Modelling of EAF, RWTH Aachen, head
• 2014-2015: Tetracom, EU, H2020 project, head

Leadership of projects with industry (head):

• Predictive controller for temperature control in pharmaceutical batch reactor, LEK, Novartis group, 2005, head
• Predictive controller in Mitsubishi PLC, INEA company, 2006, head
• Modelling of tablets quality, KRKA company, 2007, head
• Modern Control Technologies for Improving Competitiveness subsidized by European Found for Regional Development, head
• Fuzzy Modelling and Artificial Neural Network based optimal Setting of Tableting Machine (domestic for pharmaceutical company KRKA), head
• Indoor localization using inertial sensors and received signal-strength index (domestic project in the frame of TIA-Valor project framework for SME VISIONECT d.o.o., Ljubljana, 2010-2011), head
• Modelling and simulation of air-conditioning plant (domestic project for SME Klimal s.p., Celje, 2011), head
• Simulation study of control system for of air-conditioning plant (domestic project for SME Klimal s.p., Celje, 2011), head
• Plag-and-Play Control Toolbox, Evon, Austria, 2013, head
• Modelling for pulp and paper processes, Voig and Wipp, Austria, 2013, head
• Research voucher - Metronik, Realization of intelligent, self-learning, evolving methods for simulation, prediction and identification on the area of energetics, 2013 - 2015, head

SPECIFIC REQUIREMENTS/PREFERENCES
(Describe the specific requirements/preferences for the MSC fellow if necessary for the development/implementation of the project eg. required language, degree field, research experience, etc.)

MSC fellow should have PhD degree, research experience in the field of EAF modelling, identification and optimization and a good English language skill.

OTHER
(Describe any other relevant information)

No other information is needed.