Curriculum Vitae

Personal information

First name SURNAME	**Kinga ALBERT**
Address	Am Kalten Born 35, Göttingen (Germany)
Mobile	+49 175 224 0313
E-mail	albert@mps.mpg.de
Citizenship	Romanian, Hungarian
Research interests	Instrument autonomy On-board data processing, Data processing pipelines Spectropolarimeters, Ground based solar instrumentation Space based observatories, Multi-spacecraft observatories

Education

Title of qualification	**Doctor of Engineering**
Dates	July 2015 – Present (Planned end date: January 2020)
Institutes	Max Planck Institute for Solar System Research, Göttingen, Germany Technische Universität Braunschweig, Braunschweig, Germany Institut für Datentechnik und Kommunikationsnetze, Braunschweig, Germany
Research field	Computer engineering for scientific space instrumentation
Research topic	*On-board calibration method for the PHI instrument on the Solar Orbiter mission.* *Most important achievements:* - Analysis of the high resolution telescope flat fielding method with tip tilt mirror motion - Design of an autonomous error detection and mitigation algorithm for the flat fielding procedure of the high resolution telescope - Definition of interface and abstraction level convention for the on-board calibration data pipeline blocks - Study of the in flight camera dark field calibration method proposal *Supervisors: Prof. Dr.-Ing. Harald Michalik, Dr. Johann Hirzberger, Prof Dr. Sami K. Solanki*

Title of qualification	**Master of Science - Space Technology**
Dates	September 2012 – August 2014
Institute	Luleå University of Technology, Kiruna, Sweden
Profile	Spacecraft Design
Student project	*Magnetic Attitude Determination System (MADS)*: the design, implementation and testing of an attitude sensor, based on a magnetometer, for small sized spacecraft. The testing has been carried out in collaboration with the Centre National d'Etudes Spatiales (CNES). *Main activities and responsibilities:* Project management, System design, Software development *Project coordinators: Dr. Thomas Kuhn, Kjell Lundin*
Final thesis	SvalPoint: A Multi-track Optical Pointing System Design and development of an online pointing system for The Kjell Henriksen optical observatory on Svalbard. SvalPoint controls multiple instruments based on information from a target location program. *Project responsible and supervisor on sight: Dr. Fred Sigernes, Examiner: Dr. Jana Mendrok*

Title of qualification	**Bachelor in Engineering - Computer Science**
Dates	October 2008 – July 2012
Institute	Universitatea "Politehnica" din Timişoara (University), Timişoara, Romania
Profile	Computer Science and Information Technology
Final thesis	Fuzzy Logic Algorithms for Queue Management in DiffServ Architectures Design and testing of a queue management algorithm using fuzzy logic for quality of service insurance in TCP/IP. *Project coordinator Dr. Doru Todinca*

Scientific contribution

Poster	*Performance analysis of the SO/PHI software framework for on-board data reduction.* K. Albert, J. Hirzberger, D. Busse, J. Blanco Rodríguez, J. S. Castellanos Durán, J. P. Cobos Carrascosa, B. Fiethe, A. Gandorfer, Y. Guan, M. Kolleck, A. Lagg, T. Lange, H. Michalik, S. K. Solanki, J. C. del Toro Iniesta, and J. Woch, Astronomical Data Analysis Software & Systems XXVIII, College Park, Maryland, USA (2018)
Talk Proceedings paper	*Autonomous on-board data processing and instrument calibration software for the SO/PHI.* K. Albert, J. Hirzberger, D. Busse, T. Lange, M. Kolleck, B. Fiethe, D. Orozco Suárez, J. Woch, J. Schou, J. Blanco Rodriguez, A. Gandorfer, Y. Guan, J. P. Cobos Carrascosa, D. Hernández Expósito, J. C. del Toro Iniesta, S. K. Solanki, H. Michalik, Proc. SPIE 10707, Software and Cyberinfrastructure for Astronomy V, 107070O (6 July 2018);
Talk	*On-board calibration of the PHI instrument on-board the Solar Orbiter: Autonomous flat fielding of the HRT.* K. Albert, J. Hirzberger, A. Gandorfer, J. Woch, S. K. Solanki, H. Michalik. The many Scales of the Universe: Galaxies, their Suns, and their Planets, Annual Meeting of the Astronomische Gesellschaft 2017, Göttingen, Germany.
Talk	*Autonomous flat field acquisition and correction techniques for the space-borne spectropolarimeter PHI.* K. Albert, J. Hirzberger, A. Gandorfer, J. Woch, S. K. Solanki, H. Michalik. Rocks & Stars II Conference, Göttingen, Germany (2017).

Selected academic courses

2016	*Ground and space-based instruments for future research in Solar-Terrestrial physics*, International School of Space Science, Summer School, L'Aquila, Italy, 1 week
2015, 2017	*Solar System Science*, Georg-August-Universität Göttingen, 2 semesters
2015	*How to calibrate your astronomical spectrograph?,* Georg-August-Universität Göttingen, 1 semester
2013	*Spacecraft Design,* Luleå University of Technology, 1 term
2012	*Space Instruments,* Luleå University of Technology, 1 term
2011	*Digital microsystems design,* Technical University of Timisoara, 1 semester

Highlighted personal development courses

2018	*Proposal writing*, Max Planck Institute for Solar System Research, 2 days
2016	*Good scientific practice: Ethical issues in the research environment*, Max Planck Institute for Solar System Research, 2 days
2014	*Presentation Skills Workshop,* European Space Research and Technology Centre (ESTEC, ESA), 3 days

Awards

Title	**Bengt Hultqvist Prize**
Year	2014
Description	The scholarship rewards students of Luleå University of Technology for their good academic achievements in a space educational program, and for their initiatives in international exchange.
Awarding Institute	Kiruna Rotary Club

Title	**Amelia Earhart Fellowship**
Year	2017
Description	The Amelia Earhart Fellowships are awarded annually to women pursuing a Ph.D./doctoral degree in aerospace-related sciences or aerospace-related engineering.
Awarding Institute	Zonta International

Conference organisation

Title	**Rocks & Stars 2017**
Date	December 2015 – August 2016
Conference time and place	13-15 September, 2017, Max Planck Institute for Solar System Research, Göttingen, Germany
Activity	Responsibility for the conference organisation team management, shared with another PhD student and contribution to the scientific programme.

Teaching experiences

Activity	**Course planning for X-Lab summer camp**
Dates	February 2016 – July 2016
Activity	X-Lab is an experimental laboratory for high school students to experience modern, natural science research. The planning of the *astrophysics week* has been carried out in a joint effort with the course responsible professor, and another PhD student. The main tasks were the planning of topics and activties.
Institutes	XLAB-Göttingen experimental laboratory for young people eV Association Georg-August-Universität Göttingen, Germany
Position	**Laboratory Assistant**
Dates	September 2013 – October 2013
Activity	Laboratory Assistant for the course *Spacecraft on-board data handling*. Main tasks were the preparation of example applications and the helping of students with embedded C code development.
Institute	Luleå University of Technology, Kiruna, Sweden

Other experiences

Position	**Young Graduate Trainee**
Dates	September 2014 – June 2015
Activity	Study of the Time Triggered Ethernet (TTE) communication protocol for future satellite platform and launcher applications. *Project coordinators: Jean-Francois Dufour, Girogio Magistrati*
Employer	European Space Agency, European Space Research and Technology Centre (ESTEC)
Position	**Software Developer**
Dates	April 2011 – August 2012
Activity	Application software development of dashboard instrumentation for commercial vehicles.
Employer	Continental Automotive Romania S.R.L.

Methodological Skills

Programming languages	C, Python, Fortran, MATLAB, Pascal, Java, C++, Embedded C, Assembly, LogiCAD, MATLAB Simulink
Communication protocols	Time Triggered Ethernet, CAN, SpaceWire, MIL-STD-1553
Hardware description languages	*VHDL, Verilog*
CAD	NX 8.5

Personal Skills

Spoken Languages	Hungarian (mother tongue) English (proficient), Romanian (proficient), German (intermediate), Swedish (basic)

Personal Interests, Activities

Volunteering	Helping high school students in space related contests. I have been a mentor for the Odysseus contest in 2015, helping two contesting teams.
	Help with the ESA/ESTEC open day in 2014. The ESTEC open day is a major public relations one-day yearly event with over 2000 visitors.
Others	In 2019, in the citywide public outreach program of Göttingen, called the Night of Science, I have been working together with other PhD students on the special exhibitions aimed at children.
	I have been the contact point for prospective students interested in studying in Kiruna in my programme, Spacecraft Design MSc, in 2014 and 2015. I have also been writing a blog about studying in the north.
	Other activities I enjoy are hiking, trail running, camping, swimming and visual arts.