

## Filip Šroubek, applicant

**Date of birth:** August 22, 1974 in Prague, Czech Republic

**Contact address:** Institute of Information Theory and Automation (UTIA) of ASCR, Pod Vodárenskou věží 4, 182 08, Prague 8, Czech Republic

email: sroubekf@utia.cz, web: <http://www.utia.cas.cz/people/sroubek>, phone: +420-266052527

### Education

- M.S. (Computer Science) 1998, thesis: "Simulation and 3D Visualization of Atomic Collision Cascades", Czech Technical University, Dept. of Computer Science and Engineering, Prague, Czech Republic.
- Ph.D. 2003, thesis: "Image Fusion via Multichannel Blind Deconvolution", Charles University, School of Computer Science, Prague, Czech Republic.
- DSc., 2014, Research Professor in Physico-Mathematical Sciences (Informatics and Cybernetics).
- Doc., 2017, Associate Professor at Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic

### Current Positions

- Institute of Information Theory and Automation, Czech Academy of Sciences, Prague, Czech Republic; – senior researcher and vice-head of the Dept. of Image Processing,
- Charles University and Czech Technical University, Prague – associate professor of computer science (external teacher)

### Previous Positions

- 2004-2006: Postdoc, NATO fellowship, Instituto de Optica, CSIC, Madrid, Spain.
- 2010-2011: Fulbright Visiting Scholar, University of California, Santa Cruz, U.S.A.
- 2003-2012: Institute of Photonics and Electronics, Czech Academy of Sciences, Prague, Czech Republic - research fellow in the Dept. of Character. of Semiconductor Materials and Structures.

### Professional Activities

- Member of the GAČR panel, since 2023.
- Editor of Digital Signal Processing journal, Elsevier, 2013 - 2022.
- Member of the Doctoral Study Board at Charles University, Prague, Czech Republic since 2012
- Member of IEEE and Czech Association for Cybernetics since 2007.
- Member of the PhD defense board at the Universidad Politecnica, Madrid, Spain and at the Universidad de Castilla–La Mancha, Ciudad Real, Spain.
- Reviewer of several international journals (e.g. IEEE TIP, PAMI) and conferences (e.g. ICIP).

### Invited lectures

- Tutorial at ICASSP 2019, Šroubek F., Flusser J., and Žitová B: "Inverse problems in image restoration: from basic principles to current deep-learning trends".
- Tutorial at ICIP 2018, Šroubek F., Flusser J., and Žitová B: "Restoration and Recognition of Blurred Images".
- Tutorial at ICPR 2016, Cancun, Mexico, Flusser J., Šroubek F., and Žitová B.: "Handling blur".
- Tutorial at ICCV 2015, Santiago, Chile Favaro P., Wipf D., Šroubek F., and Wang J.: "Removing camera blur: Tricks of the trade".
- Keynote talk at SPIE-IS&T 2015, USA: "Advances in image restoration: from theory to practice".
- Keynote talk at ICIIP 2013, Shimla, India: "Recent advances in image restoration".
- Invited talk at NIPS 2011, Sierra Nevada, Spain: "Superresolution imaging – from equations to mobile applications".
- Invited talk at SIAM 2010, Chicago, USA: "Superresolution and blind deconvolution of video".
- Tutorial at ICIP 2009, Cairo, Egypt, Flusser J., Šroubek F., Žitová B., "Image Fusion for Image and Video Quality Enhancement".
- Tutorial at CVPR 2008, Anchorage, USA: Flusser J., Šroubek F., „Fusion for restoration and super-resolution“.

- Tutorial at (EURASIP) EUSIPCO 2007, Poznan, Poland: Flusser J., Šroubek F., Zitová B., „Image Fusion: Principles, Methods, and Applications“.
- Tutorial at the Symposium Imaging for detection and Identification, NATO Advance Study Institute, 2006: Šroubek F., Flusser J., Zitová B., „Image Fusion: A powerful tool for object identification“.
- Invited talk at the Computational Statistics 06, Rome, Italy, 2006: “Blind Superresolution”.
- Tutorial at (IEEE) ICIP 2005, Genoa, Italy: Flusser J., Šroubek F., Zitová B., „Image registration: A survey and recent advances“.

### Awards

- GAČR President’s Award 2022 for the project “Solving Inverse Problems for the Analysis of Fast Moving Objects”.
- Honorable Mention at GCPR 2019, Dortmund, Germany for outstanding contribution “Non-Causal Tracking by Deplatting”.
- Outstanding Contribution Award at CAIP 2013, York, UK.
- Prestigious award (Wichterle premium) of the Academy of Sciences of the Czech Republic, May 2008.
- Price of the Academy of Sciences of the Czech Republic for the scientific achievement “Image recognition using fusion”, 2007.
- The Award of the Chairman of the Czech Science Foundation (for the project No. GA CR 102/04/0155), 2007.
- National award (Hlávka prize) for young scientists, 2006.

### Grants

- Principal investigator of 5 national grants: GAČR GA18-05360S “Solving inverse problems for the analysis of fast moving objects” 2018-2020; GAČR 13-29225S “Image Blind Deconvolution in Demanding Conditions” 2013-2016; GAČR 202/05/0242 “Space resolved ballistic electron emission spectroscopy on individual InAs/GaAs dots embedded in AlGaAs barriers”, 2005-2007; Project of the Czech Academy of Sciences “Mathematical methods for superresolution of digital images”, 2006-2007, and travel grant of the Czech Academy of Sciences, 2013-2015.
- Co-investigator of the Ministry of the Interior grant VJ02010029 “Artificial Intelligence based Search Environment for video/photo”, 2022-2025; TAČR grant TA04011392 “Early ultrasound detection of breast cancer”, 2014-2017; and the Ministry of the Interior grant VG20102013064 “Methods for identification of image recording devices, authentication, and image reconstruction”, 2010-2013.
- Team member of the EU Artemis grant 7H14004 “Almarvi”, and nine national grants: GAČR 102/00/1711, 202/02/0098, 102/04/0155, 102/08/1593, 103/11/1552, 15-16928S, 21-03921S, Technology Agency TN01000024 - “Národní Centrum Kompetence”, and Center of Applied Research “DAR” (Ministry of Education 1M0572).
- Member and initiator of three international projects with Spain: bilateral project between the Czech Academy of Sciences and the Spanish C.S.I.C. 2002-2010, two Spanish national grants in the Instituto de Óptica (CSIC), 2005-2007 and 2007-2009.

### Publications

- over 40 journal papers, 8 book chapters, and 70 international conference papers.
- Citations: 1326, H-index: 17 (WOS)
- See the full list at <http://www.utia.cas.cz/people/sroubek>

### Other achievements

- Patent: M. Stratmann, J.F. Evers-Senne, M. Schmieder, J. Flusser, and F. Sroubek. Method for preparing images in non-visible spectral ranges, and corresponding camera and measuring arrangement, 2013. US Patent App. 13/991, 235.
- Patent: G.C. Perez and F. Sroubek. Blind deconvolution and super-resolution method for sequences and sets of images and applications thereof, 2009. US Patent App. 12/090,192.
- Software: BSR – MATLAB toolbox for multichannel blind deconvolution and superresolution (over

1000 registered users), 2008.

- Software: PIZZARO – Tools for imaging device identification, authentication, and image reconstruction, 2014.