

Filip Šroubek – Curriculum Vitae

Education:

- B.S. (Computer Science) 1996, Czech Technical University, Dept. of Computer Science and Engineering, Prague, Czech Republic.
- 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", supervisor: Prof. Jan Flusser, Charles University, School of Computer Science, Prague, Czech Republic

Research Employment:

Current: Head of the Dept. of Image Processing, Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic, Prague. Since 2006 research fellow and since 2008 vice-head of the department.

Current: Research fellow in the Dept. of Characterization of Semiconductor Materials and Structures, Institute of Photonics and Electronics, Academy of Sciences of the Czech Republic, Prague; visualization of quantum dots.

Jul 2010 – Apr 2011 Fulbright Visiting Scholar at the University of California, Santa Cruz, U.S.A.

Sep 2004 – Feb 2006 Postdoc in the Imaging and Vision Dept., CSIC, Madrid, Spain (nominee of the Spanish States Secretary of Education and Universities fellowship, and of the NATO Science fellowship)

Nov-Dec 2001 Dept. of Physics, University of Essen, Germany; computer simulation and visualization of atomic collision cascades in solids.

Sep 2000 Participated in and completed the School on Mathematical Problems in Image Processing organized by the Abdus Salam International Center for Theoretical Physics, Trieste, Italy.

Aug-Sep 1998 Joining a neural-net project conducted by the Department of Civil Engineering, Queen's University, Kingston, Canada.

Sep 1997 Working on 3D visualization of atomic collision phenomena using SGI workstations and 3D shutter glasses at Dresden University, Germany.

Teaching:

- Teaching at Charles University and the Czech Technical University: "Variational methods in Image processing"; since 2010.
- Teaching at the Czech Technical University, Faculty of Nuclear Sciences and Physical Engineering: "Statistical methods for classification and decision making"; since 2007.
- Teaching Assistant of the "Image Processing and Recognition" course at the Czech Technical University; years: 1999 - 2003.
- Supervising 2 Ph.D. students
- Supervising 8 Master theses (7 have been successfully defended)

Professional activities:

- Member of IEEE and Czech Association for Cybernetics since 2007.
- Member of the Doctoral Study Board at Charles University, Prague, Czech Republic since 2012.
- 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 Trans. Image Processing) and conferences (e.g. IEEE ICIP).

Other

- Opponent of many BS., MS. and PhD. thesis at Charles University and the Czech Technical University.
- Organizer of the 5th International Workshop in Information Optics (WIO'06), Toledo, Spain, 2006.
- Results of my super-resolution research has been disseminated by leading Spanish newspapers (El Mundo, El Pais, etc.), by the Spanish state TV channel TVE2 and also by the Czech National TV (CT2)

Funding ID

- Principal investigator of two national grants: Czech Grant Agency GACR 202/05/0242 “Space resolved ballistic electron emission spectroscopy on individual InAs/GaAs dots embedded in AlGaAs barriers”, 2005–2007; Project of the Academy of Sciences “Mathematical methods for superresolution of digital images”, 2006–2007.
- Co-investigator of the grant of Ministry of the Interior of the Czech Republic VG20102013064 “Methods for identification of image recording devices, authentication, and image reconstruction” 2010–2013.
- Team member of national grants: Czech Grant Agency 102/00/1711, 202/02/0098, 102/04/0155, 102/08/1593, 103/11/1552 and Center of Applied Research “DAR” (Ministry of Education 1M0572).
- Member and initiator of 3 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.
- Travel grants/Fellowships: Fulbright fellowship for scholars, 2010–2011; Fellowship granted by the National Program for the Mobility of Spanish and Foreign University Professors and Researches, 2004–2006; NATO Postdoctoral fellowship, 2004–2005.

Achievements Track-Record

Tutorials and Invited Presentations:

- Zitová B., Flusser J., Šroubek F. : “Image Fusion for Image and Video Quality Enhancement”, *IEEE Int’l. Conf. Image Proc. ICIP’09*, Tutorial, Cairo, Egypt, Nov. 2009
- Flusser J., Šroubek F. : “Fusion for Restoration and Super-Resolution”, *IEEE Conf. Computer Vision Pattern Recognition CVPR’08*, in One-day Tutorial “Survey and Recent Advances in Image Registration and Fusion”, Anchorage, Alaska, June 2008
- Flusser J., Šroubek F., Zitova B. : “Fusion in Image Processing”, *11th Int’l. Conf. on Information Fusion FUSION’08*, Tutorial, Cologne, Germany, July 2008
- Flusser J., Šroubek F., Zitova B. : “Image Fusion: Principles, Methods, and Applications”, *15th European Signal Proc. Conf. EUSIPCO’07*, Tutorial, Poznan, Poland, Sep. 2007
- Šroubek F., Cristobal G., Flusser J. : “Blind Superresolution”, in: *Proc. in Computational Statistics COMPSTAT 2006*, Rizzi A. and Vichi M. eds., pp. 133-145, Physica Verlag, Springer 2006 (invited paper)
- Šroubek F., Flusser J., Cristobal G. : “Combined Superresolution and Blind Deconvolution”, in: *Proc. 5th Int’l. Workshop of Information Optics WIO’06* (Cristobal G. et al. eds.), vol. AIP 860, pp. 15-26, Toledo, Spain, June 2006 (invited paper)
- Šroubek F., Flusser J., Zitova B. : “Image Fusion: A Powerful Tool for Object Identification”, in: *NATO ASI Conf. on Imaging for Detection and Identification*, Il-Ciocco, Italy, July 2006
- Zitová B., Flusser J., Šroubek F. : “Image Registration: A Survey and Recent Advances”, *IEEE Int’l. Conf. Image Proc. ICIP’05*, Tutorial, Genova, Italy, Sep. 2005

Awards

- 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, Nov 2006.

Patents

- Cristobal, G. and Sroubek, F., “Metodo de deconvolucion ciega y superresolucion para secuencias y conjuntos de imagenes, y sus aplicaciones”, pending patent no. 2005025, date: Oct 14, 2005, CSIC.

Software

- “MBD” – MATLAB toolbox for multichannel blind deconvolution and demosaicing (over 1000 registered users)
- “BSR” – MATLAB toolbox for blind superresolution (over 1000 registered users).

Publications

See the full list of publications at <http://zoi.utia.cas.cz/node/6/%C5%A0roubek/Filip>