

# Filip Šroubek's 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", Charles University, School of Computer Science, Prague, Czech Republic

## Employment:

**since 2000:** Research fellow in the Department of Image Processing, Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic, Prague, Czech Republic. Since 2008 vice-head of the department.

**since 2000:** Research fellow in the Department of Characterization of Semiconductor Materials and Structures, Institute of Photonics and Electronics, Academy of Sciences of the Czech Republic, Prague, Czech Republic.

## Study and Research Experience Abroad:

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

**Sep 2004 – Feb 2006** Postdoc position 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** Two short visits of the Dept. of Physics, University of Essen, Germany; starting a cooperation on 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** Joined 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"; from 2010.
- Teaching with prof. Jan Flusser at the Czech Technical University, Faculty of Nuclear Sciences and Physical Engineering: "Statistical methods for classification and decision making"; from fall 2007.

- Teaching Assistant of the “Image Processing and Recognition” course at the Czech Technical University; years: 1999 - 2003.
- Teaching the “Image Processing and Recognition” course at the Czech Technical University, fall 2000.
- Supervising 6 Master theses (5 have been successfully defended, 1 on the way)
- Opponent of many BS., MS. and PhD. thesis at Charles University and the Czech Technical University.
- Member of the PhD defense board at the Universidad Politecnica, Madrid, Spain.

### **Professional activities:**

- Organizer of the 5th International Workshop in Information Optics (WIO'06), Toledo, Spain, 2006.
- Principal investigator of two national grants: Grant GACR 202/05/0242, 2005 – 2007 and Project AV, 2006 – 2007;
- 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.
- Reviewer of several international journals, such as IEEE Trans. Image Processing, and conferences.
- 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)

### **Tutorials and Invited Talks:**

- 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. ICIIP’05*, Tutorial, Genova, Italy, Sep. 2005

## Language skills

native Czech, fluent English, basic Spanish.

## Computer skills

Program development using C, C++, OpenGL, Matlab, PVM; web design; T<sub>E</sub>X typesetting; Linux/UNIX administration.

## Other achievements

**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 200 registered users)
- “BSR” – MATLAB toolbox for blind superresolution (over 200 registered users).

**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.
- National award (Hlávka prize) for young scientists, Nov 2006.

**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

**Membership:**

- IEEE and Czech Association for Cybernetics since 2008 and 2007, respectively.

## Publications

See the full list of publications [here](#).