Curriculum Vitae

BARBARA ZITOVÁ

NAME: Doc. RNDr. Barbara Zitová, Ph.D.
BORN: March 13, 1972, Frydek-Mistek, Czech Republic
NATIONALITY: Czech Republic
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EDUCATION

- The Mgr. degree in Computer Science from the Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic, 1995. Topic of the diploma thesis: "Textures, the reaction diffusion generation"
- The RNDr. and Ph.D. degrees in Computer Science from the Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic, 2000. Topic of the Ph.D. thesis: "Registration of Radiometrically Deformed Images by Invariant Descriptors"
- Doc. – Associate Professor in Applied Mathematics, 2018, Czech Technical University, Prague, Czech Republic

POSITIONS

- Since 1995: Institute of Information Theory and Automation (UTIA), Czech Academy of Sciences, Prague, Czech Republic – senior researcher
- Since 2008: head of the Dept. of Image Processing, UTIA
- Charles University and Czech Technical University, Prague – associate professor of computer science (external teacher)

RESEARCH PROFILE

All aspects of digital image processing, pattern recognition, and AI applications; particularly image registration, image fusion, object recognition by invariants, feature detection, theory of moments, wavelets, deep learning. Applications od deep learning in art conservation and cultural heritage, forensic imaging, medical imaging, computer vision.

BIBLIOMETRY (SCOPUS, WoS, Google Scholar)

H-index: (15, 12, 19)
No. of publications: (64,52, 94)
No. of citations: (7050, 4885, 12 203)

SELECTED TOP-5 PUBLICATIONS

The reprints and other publications are available at http://www.utia.cz/people/zitova.

- Flusser Jan, Suk Tomáš, Zitová Barbara : Complete and Incomplete Sets of Invariants , Journal of Mathematical Imaging and Vision vol.63, 1 (2021), p. 917-922 DOI: 10.1007/s10851-021-01039-x
- Kamenický Jan, Šroubek Filip, Zitová Barbara, Hannuksela J., Turtinen M. : Image Restoration in Portable Devices: Algorithms and Optimization , Journal of Signal Processing Systems for Signal Image and Video Technology vol.91, 1 (2019), p. 9-20 DOI: 10.1007/s11265-018-1410-7
- Blažek Jan, Striová J., Fontana R., Zitová Barbara : Improvement of the visibility of concealed features in artwork NIR reflectograms by information separation , Digital Signal Processing vol.60, 1 (2017), p. 140-151 DOI: 10.1016/j.dsp.2016.09.007
- Kamenický Jan, Bartoš Michal, Flusser Jan, Mahdian Babak, Kotera Jan, Novozámský Adam, Saic Stanislav, Šroubek Filip, Šorel Michal, Zita Aleš, Zitová Barbara, Šíma Z., Švarc P., Hořínek J. : PIZZARO: Forensic analysis and restoration of image and video data , Forensic Science International vol.264, 1 (2016), p. 153-166 DOI: 10.1016/j.forsciint.2016.04.027
- Flusser Jan, Suk Tomáš, Zitová Barbara : 2D and 3D Image Analysis by Moments, John Wiley & Sons, (Chichester 2016) DOI: 10.1002/9781119039402, book

SELECTED TUTORIALS AND INVITED TALKS

- Flusser J., Sroubek F., Zitova B.: "Handling Blur", Int'l. Conf. Pattern Recognition ICPR'16, Tutorial, Cancun, Mexico, Dec. 2016.
- Sroubek F., Flusser J., Zitova B.: "Restoration and Recognition of Blurred Images", IEEE Int'l. Conf. Image Proc. ICIP'18, Tutorial, Athens, Greece, Oct. 2018.
- Sroubek F., Flusser J., Zitova B.: "Inverse Problems in Image Restoration: From Basic Principles to Current Deep-Learning Trends", IEEE Int'l. Conf. ICASSP'19, Tutorial, Brighton, U.K., May 2019.

GRANTS AND PROJECTS RUN IN 2016 – 2024

As Principal Investigator:
- AISEE - Artificial Intelligence based Search Environment for video/photo (2022 – 2025, Technology Agency of the Czech Republic (TACR), VJ02010029)
- VKG 3.0 (2019 – 2021, TACR, TH04010422)
- Hopes and Threats of Digital Era, AV 21 Strategy, (2015-2021)

As Co-Investigator:
- SCENTinel: Climate Changes and Scent Heritage: The Urgent Need for Capturing and Preserving Olfactory Landscapes in a Changing World, JPI CH EU, 2024 - 2027
- National Competence Center - Cybernetics and Artificial Intelligence (2019 – 2022, TACR).
- Mobile diagnostic system to reduce consumption and rational use of antibiotics in the primary production of cow's milk (2020 – 2022, TACR, FW01010343).
- InVideo - Image Analysis for the Police of the Czech Republic, (2017 – 2018, MV CR, VH20172018014)
- Early ultrasound detection of breast cancer (2014 – 2017 ,TACR, TA04011392).
- Automatic evaluation of videokymographic recordings for early diagnosis and prevention of vocal fold tumors (2014 – 2017 ,TACR, TA04010877).

As Key team member:
- EU Artemis grant – Almarvi (2014 – 2017), 7H14004
- 2 GACR grants

STUDENTS SUPERVISING

B. Zitova acts as a supervisor and lecturer at the Czech Technical University and Charles University. She has supervised 12 bachelor and master students (12 graduated) and 4 Ph.D. students (2 graduated). She regularly evaluates EU projects within the Horizon project, PhD and Master's theses, and is a member of the commission for PhD and Master's studies.

SCIENTIFIC AWARDS

- 2003: Josef Hlavka award
- 2006: Otto Wichterle premium award
- 2007: The Award of the Chairman of the Czech Science Foundation (for the project No. GA CR 102/04/0155) , member of the team
- 2007: Price of the Academy of Sciences of the Czech Republic for the scientific achievement "Image recognition using fusion" , member of the team
- 2010: "SCOPUS 1000 Award" in recognition of more than 1000 SCOPUS citations of their paper "Image registration methods: A survey", Image and Vision Computing, vol.21, pp. 977-1000, 2003