

DCGI (Department of Computer Graphics & Interaction, K13139), Karlovo nám. 13, 121 35 Praha 2
<http://dcgi.felk.cvut.cz>

SCOPE

Computer Graphics (CG): Realistic image synthesis (real-time rendering, production rendering). Analysis, representation, and rendering of complex 3D scenes. Simulation and rendering of natural phenomena. Virtual and augmented reality. Algorithms for cartoon animation.

Human Computer Interaction (HCI): Multimodal user interfaces (visual, audio, haptic, gestures). Special user interfaces (mobile applications, industry applications, intelligent household, iDTV). Accessibility (blind people, elderly people).

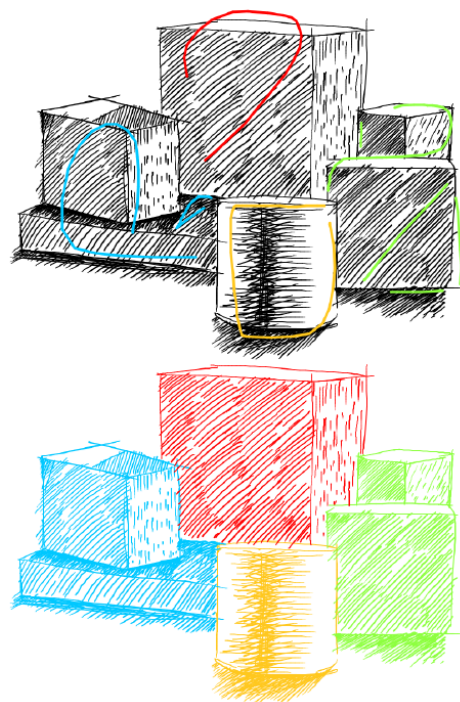
Institute of Intermedia (IIM): Transdisciplinary research in technology, science, performance and the arts. Collaborations among students, artists, academics and scientists. Virtual and mixed realities, multimedia, net art, interactive installations, electronic and generative music synthesis, motion-capture and distributed sensing.

EXECUTIVES

Head: Jiří Žára, **Deputy Head:** Pavel Slavík, **Research group leaders:** Jiří Bittner, Zdeněk Míkovec, Roman Berka, **Pedagogy:** Petr Felkel, **Registrar:** Alena Mrázková

DISTINGUISHED PUBLICATIONS

- Poláček, O. - Sporka, A. - Slavík, P.: **A Comparative Study of Pitch-Based Gestures in Nonverbal Vocal Interaction.** *IEEE Transactions on Systems, Man, and Cybernetics - part A: Systems and Humans*. 2012, vol. 42, no. 6, p. 1567-1571. ISSN 1083-4427.
- Noris, G. - Sýkora, D. - Shamir, A. - Coros, S. - Whited, B. - et al.: **Smart Scribbles for Sketch Segmentation.** *Computer Graphics Forum*. 2012, vol. 31, no. 8, p. 2516-2527. ISSN 0167-7055. [see figure on the right side ->]
- Vinkler, M. - Havran, V. - Sochor, J.: **Visibility Driven BVH Build Up Algorithm for Ray Tracing.** *Computers & Graphics*. 2012, vol. 36, no. 4, p. 283-296. ISSN 0097-8493.
- Jamříška, O. - Sýkora, D. - Hornung, A.: **Cache-efficient Graph Cuts on Structured Grids.** In *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition*, p. 3673-3680, 2012.
- Best Paper Award for Balata J., Míkovec Z., Slavík P.: **Mutual Communication in Navigation of Visually Impaired.** In *CogInfoCom 2012, IEEE*, 2012, p. 769-774. ISBN 978-1-4673-5185-0.

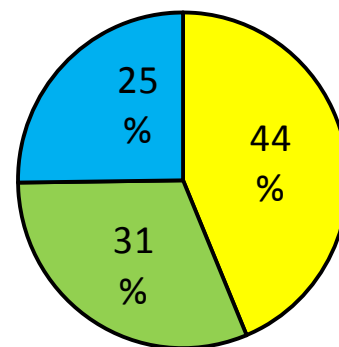


The total number of publications in 2012 was 26 (5 impacted journal papers, 12 international conference papers, 3 international book chapters). There were 77 citations of papers authored by department members registered in the SCI database.

IMPORTANT PROJECTS

- ERG Marie Curie PERG07-GA-2010-268216 – **ToonPaint**: Efficient Painting & Enhancement of Hand-drawn Cartoon Animations. 2010-2012.
- EU FP7-ICT-247765 – **VERITAS**: Virtual and Augmented Environments and Realistic User Interactions To achieve Embedded Accessibility DesignS. 2010-2013.
- EU FP7-ICT-224348 – **AEGIS**: Open Accessibility Everywhere: Groundwork, Infrastructure, Standards. 2008-2012.
- TAČR TE01020415 - **V3C**: Visual Computing Competence Center. 2012-2019.
- GAP202/11/1883 – **ARGIE**: Global Illumination for Augmented Reality in General Environments. 2011-2013.
- GAP202/12/2413 – **OPALIS**: Optimal Algorithms for Image Synthesis. 2012-2014.

Revenues in 2012



- Teaching
- CZ projects
- EU projects

There were 13 research projects being solved in 2012 (3 EU projects, 1 National Competence Center, 2 projects by the Grant Agency of the Czech Republic, 3 by the Ministry of Education, 4 others) with total income of over 350 thousands Euros.

MAJOR INDUSTRIAL PARTNERS AND SPONSORS

CESNET, HTC, IBM Research, Interaction4u, Microsoft Research, Skoda-Auto, UPP.

EDUCATION

- Bachelor and Master courses - study programmes Software Technologies and Management (<http://stm.fel.cvut.cz>) and Open Informatics (<http://informatika.fel.cvut.cz>). Supervision of three study specializations: Web & Multimedia, Computer Graphics, Software Engineering & Interaction. There were 112 graduated students in these study specializations (58 with Bc. degree, 54 with master degree = Ing.).
- Doctoral courses - study branch Information Science and Computer Engineering. There were 8 doctoral students at the DCGI, one of them, Ivo Malý, successfully defended his Ph.D. thesis in December 2012.

OTHER NOTABLE ACTIVITIES

- **Semestrále** - two exhibitions of student works (SEMESTRALE VII, SEMESTRALE VIII) from courses Graphical Design and Multimedia Applications lectured by Lucie Svobodová, Roman Berka, and David Sedláček.
- Bilateral Student scientific workshop **USER INTERFACES** in Dresden - student exchange with HTW Dresden, November 2012.
- Ondřej Poláček at 1 year scientific stay at University of Salzburg, Austria.
- **Invited talks** - **Jan Novák** (Karlsruhe Institute of Technology), **Ladislav Kavan** (ETH Zurich), **Marcin Sikorski** (Gdansk University of Technology), **Reinhold Preiner** (TU Vienna).
- „**Laboratoř moci**“ - IIM in cooperation with National Museum developed light and sound long-term exhibition in National Memorial on the Vítkov Hill devoted to the period of totality in Czech Republic.
- **Straw Man** – IIM participated on dance project in cooperation with AVMedia company, CIANT, and National Theatre, October 2012.
- „**Brány**“ – IIM realized technical part of music and dance project designed by students of Academy of Performing Arts in Prague, under the supervision of the Czech composer Michal Rataj.