

Personal Information

Name: Tomáš Chlubna
University: Brno University of Technology
Faculty: Faculty of Information Technology
Department: Department of Computer Graphics and Multimedia
Email: ichlubna@fit.vutbr.cz
Institutional profile: fit.vut.cz/person/ichlubna
Google Scholar: scholar.google.com/citations?user=WBtVHOIAAAAJ
Orcid: orcid.org/0000-0003-3126-0545
GitHub: github.com/ichlubna
Research materials: fit.vutbr.cz/~ichlubna/research
Supervised theses: vut.cz/en/students/final-thesis?formID=search_zav_praci&vedouci=clubna&rok=

Education

Faculty of Information Technology, Brno University of Technology 2016
Bachelor's degree

Faculty of Information Technology, Brno University of Technology 2018
Master's degree

Publications

Evaluation of 4D Light Field Compression Methods 2019
David Bařina, Tomáš Chlubna, Marek Šolony, Drahomír Dlabaja, Pavel Zemčık Conference paper
– Conference: 27th International Conference on Computer Graphics, Visualization and Computer Vision 2019, Plzeň
– ISBN: 978-80-86943-37-4
– CORE 2018 Rank: B
– Author's contribution: 20%

Real-time per-pixel focusing method for light field rendering 2021
Tomáš Chlubna, Tomáš Milet, Pavel Zemčık Journal paper
– Journal: Computational Visual Media
– DOI: 10.1007/s41095-021-0205-0
– Scopus 2021: Q1 | CiteScore 5.9 | SJR 1.579 | SNIP 1.615
– Author's contribution: 70%

Evaluation of 4D Light Field Compression Methods 2022
David Bařina, Marek Šolony, Tomáš Chlubna, Drahomír Dlabaja, Ondřej Klima, Pavel Zemčık Journal paper
– Journal: Multimedia Tools and Applications
– DOI: 10.1007/s11042-021-11645-x
– Scopus 2022: Q1 | CiteScore 6.1 | SJR 0.72 | SNIP 1.182
– Author's contribution: 20%

Real-Time Light Field Video Focusing and GPU Accelerated Streaming 2023
Tomáš Chlubna, Tomáš Milet, Pavel Zemčık, Michal Kula Journal paper
– Journal: Journal of Signal Processing Systems
– DOI: 10.1007/s11265-023-01874-8
– Scopus 2022: Q2 | CiteScore 4.2 | SJR 0.472 | SNIP 0.777
– Author's contribution: 70%

How Capturing Camera Trajectory Distortion Affects User Experience on Looking Glass 3D Display <i>Tomáš Chlubna, Tomáš Milet, Pavel Zemčík</i> – Journal: Multimedia Tools and Applications – DOI: 10.1007/s11042-023-16350-5 – Scopus 2022: Q1 CiteScore 6.1 SJR 0.72 SNIP 1.182 – Author’s contribution: 75%	2024 Journal paper
Automatic 3D-Display-Friendly Scene Extraction from Video Sequences and Optimal Focusing Distance Identification <i>Tomáš Chlubna, Tomáš Milet, Pavel Zemčík</i> – Journal: Multimedia Tools and Applications – DOI: 10.1007/s11042-024-18573-6 – Scopus 2022: Q1 CiteScore 6.1 SJR 0.72 SNIP 1.182 – Author’s contribution: 80%	2024 Journal paper
Lightweight All-Focused Light Field Rendering <i>Tomáš Chlubna, Tomáš Milet, Pavel Zemčík</i> – Journal: Computer Vision and Image Understanding – DOI: 10.1016/j.cviu.2024.104031 – Scopus 2022: Q1 CiteScore 9.4 SJR 1.213 SNIP 2.09 – Author’s contribution: 90%	2024 Journal paper
How Color Profile Affects the Visual Quality in Light Field Rendering and Novel View Synthesis <i>Tomáš Chlubna, Tomáš Milet, Pavel Zemčík</i> – Journal: Multimedia Tools and Applications – DOI: 10.1007/s11042-024-19396-1 – Scopus 2022: Q1 CiteScore 6.1 SJR 0.72 SNIP 1.182 – Author’s contribution: 90%	2024 Journal paper
Efficient Random-Access GPU Video Decoding for Light-Field Rendering <i>Tomáš Chlubna, Tomáš Milet, Pavel Zemčík</i> – Currently under review - Major revision – Journal: Journal of Visual Communication and Image Representation – DOI: N/A – Scopus 2022: Q1 CiteScore 6.8 SJR 0.626 SNIP 1.063 – Author’s contribution: 90%	2024 Journal paper
Autofocus and Out-of-Focus Artifacts Mitigation Methods for 3D Displays <i>Tomáš Chlubna, Tomáš Milet, Pavel Zemčík</i> – Currently under review - Major revision – Journal: Visual Informatics – DOI: N/A – Scopus 2022: Q2 CiteScore 4.8 SJR 0.79 SNIP 0.971 – Author’s contribution: 90%	2024 Journal paper

The reference implementations for all the listed papers are publicly available. The datasets created for the experiments are available to download and free to use for other researchers.

Academic Contributions

Paper Review <i>Reviewed manuscripts in journals:</i> – Journal of Computer Assisted Radiology and Surgery: 3 reviews – Multimedia Tools and Applications: 25 reviews – IEEE Transactions on Circuits and Systems for Video Technology: 1 review – Computer Graphics Forum: 1 review – Virtual Reality: 1 review <i>The counts also include each major revision as a new review.</i>	2023–2024
Thesis Supervision <i>Supervision of successfully defended theses at BUT FIT:</i> – 29 bachelor’s theses – 5 master’s theses	2018–2023

Thesis Review

2018–2023

Review of theses at BUT FIT:

- 36 bachelor's theses
- 9 master's theses

Teaching at FIT BUT

2018–2023

Supervision of computer laboratory exercises and lecturing in subjects:

- Computer Graphics Principles
- PC Seminar (basic skills for beginning students)
- User Interface Programming
- Multimedia
- Computational Geometry

Other teaching

2018–2023

Other teaching activities outside FIT BUT:

- Leading an IT course at Soukromá SOŠ manažerská a zdravotnická s. r. o.
- Computer seminar for seniors at Kávéeska Brno
- Supervision of a graduation project at Gymnázium a JŠ Břeclav

2017

2022–2023

2023

International Research Projects

Project SAUCE - Smart Asset re-Use in Creative Environments Involved as researcher.

2019–2020

IT4Innovations excellence in science Published papers.

2018–2020

KDT JU AIDOaRt Published papers.

2021–2024

NGI0 Entrust - HORIZON EUROPE Involved as researcher.

2023–2025

Technical Skills and Interests

Programming Languages: C, C++, Python, CUDA, GLSL, HTML, JavaScript, PHP

Developer Tools: Vim, GCC, NVCC, Arch Linux

Frameworks: OpenGL, CUDA, Vulkan

Software: GIMP, Blender

Soft Skills: Personality psychology course certificate by Flotila s.r.o.

Areas of Interest: 3D graphics, image-based rendering, light fields, multimedia

Languages: City & Guilds: Level 1 Certificate B2 (English), Österreichisches Sprachdiplom Deutsch B1 (German)

Products and Other Works

Nepanikař Main developer of this mobile app for help with mental health issues.

2019–2023

Smarter Instruments company Developed demo applications for Looking Glass 3D display.

2019–2020

More than 20 open-source GitHub repositories related to the research and other projects

2018–2024

Patches for existing libraries Fixed and reported bugs in OpenJPEG, FFmpeg, Blender, etc.

2018–2024

Awards

Excel@FIT 2018 Participated with master's thesis in this student conference.

2018

Angelini University Award CZ Second place prize for the development of Nepanikař application.

2019

Prize of Zdena Rábová Prize is awarded for excellent study and science results.

2019

Gratias Tibi Prize First place prize for the development of Nepanikař application.

2020