

Dr. Eduard Zell

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Several publications at top graphics and computer vision journals (SIGGRAPH, Eurographics, ECCV, CVPR) and the Eurographics PhD Award confirm my strong performance in research. My unique skill is that I combine technical skills with a general curiosity for interdisciplinary research and start-ups. In order to overcome typical communication barriers and to identify the customer's needs, I dive deeper into the topics of my collaborators than many peers.

SKILLS	Expert	Intermediate
Programming	C++, OpenGL, OpenCL	Python, CUDA, R, CMake
APIs	Qt, FBX, Eigen	GTest, Mel, CPLEX, Alembic
Software	Maya, GIMP	Unreal Engine
Languages	German, English, Russian	Spanish

EXPERIENCE

From Aug. 2024	Father, Independent Researcher, Biz Developer
Aug. 2020 – June 2024	Research Group Leader – Germany, Bonn University <ul style="list-style-type: none">raised about EUR 1-1.5 millions of external funding, mostly within larger research projects (overall EUR 6.5 millions)pivoted from post-processing of 4D data to acquisition of high-res 4D datanegotiated big hardware purchases and coordinated hard- and software prototypes for 4D data acquisitionpublications in top-journals on photometric stereo and depth-from-stereo
Nov. 2018 – June 2020	Research Fellow (PostDoc) – Ireland, Trinity College Dublin <ul style="list-style-type: none">two Eurographics papers on identifying minimal input data for facial animation or facial rigs using integer optimizationSIGGRAPH and EG tutorial on character perception and interaction
July 2018 – Oct. 2018	Researcher – Germany, Berlin <p>prepared a grant proposal for a self-funded PostDoc</p>
Sept. 2017 – June 2018	Senior Software Developer – Germany, Trotzkind GmbH, Berlin <p>developed from scratch a state-of-the-art prototype capable of:</p> <ul style="list-style-type: none">scan-to-scan alignment (non-rigid registration) for volumetric videoremeshing, mesh repair and other geometry editing algorithmscontext adapting 4D sequences using semi-automatic rigging algorithmsFBX and Alembic importer/exporter
Oct. 2010 – Mar. 2018	Research Assistant and PhD Student – Germany, CITEC Cluster of Excellence, Bielefeld University <ul style="list-style-type: none">finished PhD with distinction and received EG PhD Award (top 3 in Europe)R&D on 3D scanning, editing, animating and rendering virtual facesdeveloped custom 3D scan registration software for Adidasco-developed an award-winning VR-system for stroke patient rehabilitationinterdisciplinary research on facial perception of digital charactersheld lectures in game development and real-time rendering
Oct. 2016 – May 2017	Parental Leave

Nov. 2015 – May 2016	Project Head – Germany/Turkey , SUN start-up network organized with a team a trip consisting of 15 company visits and three networking events to connect with Istanbul's start-up community
June 2013 – Sept. 2013	Visiting Researcher – South Korea , KAIST, Daejeon researched and published work on facial animation retargeting
Aug. 2008 – Aug. 2009	Software/Shader-Developer – Austria , Vizrt, Schwaz coded 3d computer graphics software for TV studios
Sept. 2006 – Feb. 2007	3D-Artist (Internship) – Germany , RTT (now 3DExcite), Munich real-time visualizations for Ferrari, Volkswagen and Audi

EDUCATION

Oct. 2010 – June 2017	PhD in Computer Graphics – Germany , Bielefeld
Sept. 2009 – Aug. 2010	Computer Animation and Visual Effects (MSc) – UK , Bournemouth
Sept. 2005 – Feb. 2009	Computer Science and Media (BSc) – Germany , Furtwangen
Feb. 2008 – July 2008	Software Engineering (study abroad) – Spain , Gijón
June 2004	University-entrance diploma – Germany , Rostock

SCHOLARSHIPS

July 2013 – Aug. 2013	DAAD-NRF-Summer Institute Program (stay abroad in South Korea)
July 2007 – Aug. 2010	"Evangelisches Studienwerk" (scholarship for outstanding students)
Mar. 2008 – Mar. 2011	e-fellows (scholarship for high-potentials)
Feb. 2008 – July 2008	ERASMUS (stay abroad in Spain)

AWARDS

May 2019	Eurographics PhD Award (Europe's highest award in computer graphics)
Jan. 2019	Faculty Award for outstanding PhD thesis
Mar. 2015	FameLab NRW (2 nd Place) – worldwide science communication competition
Sept. 2013	Eurographics Medical Prize (3 rd Place)

VOLUNTEER

Oct. 2012 – Oct. 2014	coordinator within the alumni network of the "Evangelisches Studienwerk"
2003 – 2008	various volunteer positions (e.g. student representative, youth leader)
Oct. 2004 – June 2005	Civil service (taking care of drug addicted and disabled people), Caritas

INTERESTS

traveling, ballroom dances, rock climbing, modern art and architecture

PUBLICATIONS

Feature-Preserving Mesh Decimation for Normal Integration, Moritz Heep, Sven Behnke, Eduard Zell;
Computer Vision and Pattern Recognition (CVPR), 2025

An Adaptive Screen-Space Meshing Approach for Normal Integration, Moritz Heep, Eduard Zell;
European Conference on Computer Vision (ECCV), 2024

Image Segmentation from Shadow-Hints using Minimum Spanning Trees, Moritz Heep, Eduard Zell;
SIGGRAPH Poster, 2024

Image-Coupled Volume Propagation for Stereo Matching, Oh-Hun Kwon, Eduard Zell; *IEEE
International Conference on Image Processing (ICIP), 2023*

ShadowPatch: Shadow Based Segmentation for Reliable Depth Discontinuities in Photometric Stereo
Moritz Heep, Eduard Zell; *Computer Graphics Forum 41 (7), 635-646, 2022*

Compact Facial Landmark Layouts for Performance Capture, Eduard Zell, Rachel McDonnell; *Computer
Graphics Forum 41(2)/Eurographics, 2022*

Volumetric Video, Eduard Zell, Fabien Castan, Simone Gasparini, Anna Hilsmann, Misha Kazhdan, Andrea
Tagliasacchi, Dimitris Zarpalas, Nick Zioulis; *Eurographics Tutorial 2021*

From Perception to Interaction with Virtual Characters, Eduard Zell, Katja Zibrek, Xueni Pan, Marco
Gillies, Rachel McDonnell; *Eurographics Tutorial 2020*

Expression Packing: As-Few-As-Possible Training Expressions for Blendshape Transfer, Emma
Carrigan, Eduard Zell, Rachel McDonnell; *Computer Graphics Forum 39(2)/Eurographics, 2020*

Perception of Virtual Characters, Eduard Zell, Katja Zibrek, Rachel McDonnell; *SIGGRAPH Course 2019.*

The Secret of Appeal - Understanding Perception of Realistic and Stylized Faces, Eduard Zell, *PhD-
Thesis, 2018.*

Facial Retargeting with Automatic Range of Motion Alignment, Roger Blanco i Ribera*, Eduard Zell*, J.
P. Lewis, Junyong Noh, Mario Botsch; *ACM Transaction on Graphics 36(4)/SIGGRAPH, 2017, (*equal
contribution).*

**Differential Effects of Face-Realism and Emotion on Event-Related Brain Potentials and Their
Implications for the Uncanny Valley Theory**, Sebastian Schindler*, Eduard Zell*, Mario Botsch,
Johanna Kissler; *Nature Scientific Reports, 2017, 7, 45003 (*equal contribution).*

**To Stylize or not to Stylize? The Effect of Shape and Material Stylization on the Perception of
Computer-Generated Faces**, Eduard Zell, Carlos Aliaga, Adrian Jarabo, Katja Zibrek, Diego Gutierrez,
Rachel McDonnell, Mario Botsch; *ACM Transaction on Graphics 34(6)/ SIGGRAPH Asia, 2015, pp.
184:1-184:12.*

Accurate Face Reconstruction through Anisotropic Fitting and Eye Correction, Jascha Achenbach,
Eduard Zell, Mario Botsch; *Proc. of Vision, Modeling and Visualization, 2015.*

A Natural Movement Database for Management, Documentation, Visualization, Mining and

Modeling of Locomotion Experiments, Leslie Theunissen, Michael Hertrich, Cord Wiljes, Eduard Zell, Christian Behler, Andre Krause, Holger Bekemeier, Philipp Cimiano, Mario Botsch, Volker Dürr; *Proc. of Living Machines, 2014, pp. 308-319.*

ElastiFace: Matching and Blending Textured Faces, Eduard Zell, Mario Botsch; *NPAR '13: Proc. of the Symposium on Non-Photorealistic Animation and Rendering, 2013, pp. 15-24.*

OctaVis: A Virtual Reality System for Clinical Studies and Rehabilitation, Eduard Zell, Eugen Dyck, Agnes Kohsik, Philip Grewe, David Flentge, York Winter, Martina Piefke, Mario Botsch; *3rd Place - Dirk Bartz Prize for Visual Computing in Medicine (Eurographics Medical Prize), 2013, pp. 9-12.*

OctaVis: An Easy-to-Use VR-System for Clinical Studies, Eugen Dyck, Eduard Zell, Agnes Kohsik, Philip Grewe, York Winter, Martina Piefke, Mario Botsch; *Proc. of Virtual Reality Interaction and Physical Simulation (VRIPHYS), 2012, pp. 127-136.*

Developing Design Guidelines for Characters from Analyzing Empirical Studies on the Uncanny Valley, Eduard Zell, Mario Botsch; *Proc. of ACM International Symposium on Facial Analysis and Animation, 2012, pp. 11:1-2.*

REVIEWER

Eurographics 2018, 2020, 2023

IEEE VR 2020, 2022

ACM SIGGRAPH Motion, Interaction and Games (MIG) 2020-2023

IEEE Transactions on Visualization and Computer Graphics 2023

International Journal of Human-Computer Interaction 2021-2022

Computers & Graphics 2020-2022

ACM Symposium on Perception 2019

ACM SIGGRAPH Symposium on Computer Animation (SCA) 2018