

# Dan A. KOSCHIER

## PERSONAL DATA

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PLACE AND DATE OF BIRTH: Offenbach am Main, Germany | 01 August 1988  
EMAIL: [dan.koschier@gmail.com](mailto:dan.koschier@gmail.com)

## EDUCATION

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|---------------------|---|
| SEP 2017 – DEC 2017 | Visiting researcher<br><b>University College London</b><br>London, United Kingdom<br>Smart Geometry Group, Prof. Niloy Mitra  |
| SINCE JUL 2016      | PhD student<br><b>Rheinisch-Westfälische Technische Hochschule Aachen</b><br>Aachen, Nordrhein-Westfalen, Germany<br>Advisor: Prof. Jan BENDER  |
| SEP 2012 – JUN 2016 | PhD student (Fast-Track Scholarship Holder)<br><b>Graduate School of Computational Engineering, TU Darmstadt</b><br>Darmstadt, Hessen, Germany<br>Advisor: Prof. Jan BENDER   |
| OCT 2011 – SEP 2014 | Master of Science in COMPUTATIONAL ENGINEERING<br><b>Technical University of Darmstadt</b><br>Darmstadt, Hessen, Germany<br>Grade: <b>1.1 (with honours)</b> (Scale: 1.0 (best) – 5.0 (worst))<br>Thesis: “Adaptive Tetrahedral Meshes for Brittle Fracture Simulation” |
| OCT 2008 - SEP 2011 | Bachelor of Science in COMPUTATIONAL ENGINEERING<br><b>Technical University of Darmstadt</b><br>Darmstadt, Hessen, Germany<br>Grade: <b>1.8</b> (Scale 1.0 (best) – 5.0 (worst))<br>Thesis: “Physically Based Animation of Brittle Fracture”                            |

## PUBLICATIONS

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- M. WEILER, D. KOSCHIER, M. BRAND, and J. BENDER (2018). “A Physically Consistent Implicit Viscosity Solver for SPH Fluids”. *Computer Graphics Forum (Eurographics, conditionally accepted)*, pp. 1–12.
- J. BENDER and D. KOSCHIER (2017). “Divergence-Free SPH for Incompressible and Viscous Fluids”. *IEEE Transactions on Visualization and Computer Graphics* 23.3, pp. 1193–1206.
- J. BENDER, D. KOSCHIER, T. KUGELSTADT, and M. WEILER (July 2017). “A Micropolar Material Model for Turbulent SPH Fluids”. *ACM SIGGRAPH / Eurographics Symposium on Computer Animation*, pp. 1–8.
- D. KOSCHIER and J. BENDER (July 2017). “Density Maps for Improved SPH Boundary Handling”. *ACM SIGGRAPH / Eurographics Symposium on Computer Animation*, pp. 1–10.
- D. KOSCHIER, J. BENDER, and N. THUERREY (2017). “Robust eXtended Finite Elements for Complex Cutting of Deformables”. *ACM Transactions on Graphics* 36.4, 55:1–55:13.

- D. KOSCHIER, C. DEUL, M. BRAND, and J. BENDER (2017). “An hp-Adaptive Discretization Algorithm for Signed Distance Field Generation”. *IEEE Transactions on Visualization and Computer Graphics* 23.10, pp. 2208–2221.
- D. KOSCHIER, C. DEUL, and J. BENDER (2016). “Hierarchical hp-Adaptive Signed Distance Fields”. *ACM SIGGRAPH / Eurographics Symposium on Computer Animation*, pp. 1–10.
- M. WEILER, D. KOSCHIER, and J. BENDER (2016). “Projective Fluids”. *ACM Motion in Games*, pp. 1–6.
- J. BENDER and D. KOSCHIER (2015). “Divergence-Free Smoothed Particle Hydrodynamics”. *ACM SIGGRAPH / Eurographics Symposium on Computer Animation*, pp. 1–9.
- J. BENDER, D. KOSCHIER, P. CHARRIER, and D. WEBER (2014). “Position-Based Simulation of Continuous Materials”. *Computers & Graphics* 44.1, pp. 1–10.
- D. KOSCHIER, S. LIPPONER, and J. BENDER (2014). “Adaptive Tetrahedral Meshes for Brittle Fracture Simulation”. *ACM SIGGRAPH / Eurographics Symposium on Computer Animation*, pp. 1–10.

## TEACHING

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ST17 Practical course	“ <b>Game Physics</b> ” at RWTH Aachen Full organisation and teaching
ST17 Lecture and exercise	Assistant for the course “ <b>Adv. Techniques in Physically Based Animation</b> ” at RWTH Aachen, Preparation of assignment sheets and teaching in lab sessions
ST17 Seminar	Assistant for the seminar “ <b>Current Topics in Fluid Animation</b> ” at RWTH Aachen, Supervision of individual students
ST17 Proseminar	Assistant for the seminar “ <b>Selected Topics in Game Physics</b> ” at RWTH Aachen, Supervision of individual students
WT16/17, WT17/18 Practical course	“ <b>Fluid Simulation in Computer Graphics</b> ” at RWTH Aachen, Full organisation and teaching
WT16/17, WT17/18 Lecture and exercise	Assistant for the course “ <b>Physically Based Animation</b> ” at RWTH Aachen Preparation of assignment sheets and teaching in lab sessions
WT16/17, WT17/18 Seminar	Assistant for the seminar “ <b>Current Topics in Physically Based Animation</b> ” at RWTH Aachen, Supervision of individual students
WT16/17, WT17/18 Proseminar	Assistant for the seminar “ <b>Computer Animation</b> ” at RWTH Aachen Supervision of individual students
WT14/15, WT15/16 Lecture and exercise	Assistant for the course “ <b>Dynamic Simulation of Multibody Systems</b> ” at TU Darmstadt, Preparation of assignment sheets and teaching in lab sessions
WT14/15, WT15/16 Seminar	Assistant for the seminar “ <b>Physically Based Animation</b> ” at TU Darmstadt Supervision of individual students
ST14, ST15 Lecture and exercise	Assistant for the course “ <b>Physically Based Animation</b> ” at TU Darmstadt Preparation of assignment sheets and teaching in lab sessions
ST14, ST15	Assistant for the course “ <b>Simulation in Computer Graphics</b> ”

Practical course | at TU Darmstadt, Preparation of assignment sheets and teaching in lab sessions

ST := Summer term

WT := Winter term

## WORK EXPERIENCE

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MAY 2010 – JAN 2011 | Software Developer  
FRAUNHOFER INSTITUTE FOR COMPUTER GRAPHICS RESEARCH, Fraunhofer-  
str. 5, 64283 Darmstadt, Germany  
Development of the scientific visualization software iFX VISUALIZATION

MAY 2008 – APR 2010 | Software Developer  
UNITEC INFORMATIONSSYSTEME GMBH, Rodenbacher Chaussee 6, 63457  
Hanau-Wolfgang, Germany  
Development of in-house software and plugins for CAD products including AUTODESK  
AUTOCAD and AUTODESK P&ID

## SCHOLARSHIPS AND CERTIFICATES

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JAN 2015 Softskill certificate: Scientific Writing in English, Ingenium, TU Darmstadt  
OCT 2014 Softskill certificate: Conference Presentation, Ingenium, TU Darmstadt  
JUN 2014 Softskill certificate: Voice and Body Coaching, Ingenium, TU Darmstadt  
JAN 2014 Softskill certificate: Communication and Teamwork, Ingenium, TU Darmstadt  
SEP 2012 Scholarship for Fast-Track PhD programme at GSC CE, TU Darmstadt

## LANGUAGES

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GERMAN: Native  
ENGLISH: Fluent

## PROGRAMMING SKILLS

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Excellent knowledge: C, C++, OPENGL, PYTHON, L<sup>A</sup>T<sub>E</sub>X  
Good knowledge: JAVA, C#, LINUX (BASH), WINDOWS (BATCH), MATHEMATICA, MATLAB

## INTERESTS AND ACTIVITIES

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Ballroom dancing, travelling, technology, open-source software, programming