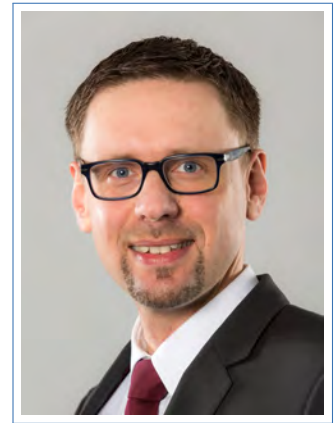


Dr.-Ing. Christian Teutsch

Publications

✉ cteutsch@web.de
www.cteutsch.de



Publications

- C. Simler, C. Teutsch, and D. Berndt, "Bimodal model-based 3d vision and defect detection for free-form surface inspection," in *Proc. Int. Conf. on Computer Vision Theory and Applications (VISAPP 2017)*, vol. 4, (Porto, Portugal), pp. 451–458, 2017.
- C. Teutsch, S. Sauer, D. Berndt, M. Wessner, and S. Schneickert, "Geometrieerfassung," in *Angewandte Virtuelle Techniken im Produktentstehungsprozess* (M. Schenk and M. Schumann, eds.), pp. 287–330, Berlin: Springer Vieweg, 2016.
- D. Berndt, C. Teutsch, and T. Dunker, "Perspektivische Betrachtung – Detektion von Oberflächendefekten auf Freiformbauteilen," *inspect*, vol. 17, no. 6, pp. 50–52, 2016.
- J. Futterlieb, C. Teutsch, and D. Berndt, "Smooth visualization of large point clouds," *IADIS Int. Journal on Computer Science and Information Systems*, vol. 11, no. 2, pp. 146–158, 2016.
- D. Berndt, C. Teutsch, and T. Dunker, "Detektion von Oberflächendefekten auf Freiformbauteilen," *Fraunhofer Vision Leitfaden zur Inspektion und Charakterisierung von Oberflächen mit Bildverarbeitung*, vol. 16, pp. 93–96, 2016.
- J. Futterlieb, C. Teutsch, and D. Berndt, "Interactive visualization of massive 3d point clouds," in *Proc. 10th Int. Conf. Computer Graphics, Visualization, Computer Vision and Image Processing (CGVCVIP2016)* (K. Blashki and Y. Xiao, eds.), pp. 223–230, IADIS, 2016.
- C. Teutsch and D. Berndt, "Hautkrebs sicherer erkennen," *Mitteldeutsche Mitteilungen (VDI)*, vol. 25, no. 3, pp. 22–23, 2016.
- C. Teutsch, J. Futterlieb, and D. Berndt, "Visualisierung unbegrenzt großer 3d-Datenmengen," *Fraunhofer Vision Leitfaden zur Industriellen Röntgentechnik*, vol. 2, pp. 72–74, 2015.
- H. Gollnick, D. Göppner, D. Berndt, L. Dornheim, K. Kellermann, C. Teutsch, P. Weber, and M. Weber, "Dermascanner plus: Half automatic computer assisted full body skin imaging system for dermatology," *Dermatology practical & conceptual*, vol. 5, no. 2, pp. 159–160, 2015.
- H. Gollnick, D. Göppner, D. Berndt, L. Dornheim, K. Kellermann, C. Teutsch, P. Weber, and M. Weber, "Dermascanner plus: Methods of high-precision optical metrology lay the foundations for a constant reproducible quality in computer-aided skin cancer screening," *Dermatology practical & conceptual*, vol. 5, no. 2, pp. 252–253, 2015.

- C. Teutsch, "Verfahren zur Modellbasierten Analyse und Auswertung von 3d-Punktwolken," *Fraunhofer Vision Leitfaden zur Optischen 3D-Messtechnik*, vol. 1, pp. 59–62, 2014.
- D. Berndt and C. Teutsch, "Stereobildverarbeitung / Triangulation," *Fraunhofer Vision Leitfaden zur Optischen 3D-Messtechnik*, vol. 1, pp. 14–19, 2014.
- N. Bachfischer, D. Berndt, M. Hübner, J. Schnee, and C. Teutsch, "Verfahren zum Messen und Bewerten einer Beschriftbildqualität eines Beschriftbildes auf einem Gegenstand und Messvorrichtung zur Durchführung des Verfahrens." Patent DE102009013088B4, March 18 2012. Fraunhofer-Gesellschaft e.V., Siemens AG.
- C. Teutsch, D. Berndt, and E. Trostmann, "A parallel point cloud clustering algorithm for subset segmentation and outlier detection," in *Videometrics, Range Imaging, and Applications XI (Optical Metrology 2011)* (F. Remondino and M. R. Shortis, eds.), vol. 8085 of *SPIE Proc.*, p. 808509, 2011.
- C. Teutsch, "Optische Messtechnik für ein modernes Denkmalmonitoring," *Leistungen und Ergebnisse. Jahresbericht 2010. Fraunhofer Institut für Fabrikbetrieb und -automatisierung IFF*, vol. 1, pp. 28–29, 2011.
- C. Teutsch, "Innovative Methoden zur Verarbeitung digitalisierter 3-d-Messdaten," *Leistungen und Ergebnisse. Jahresbericht 2010. Fraunhofer Institut für Fabrikbetrieb und -automatisierung IFF*, vol. 1, pp. 30–31, 2011.
- C. Teutsch, "Optische Qualitätsprüfung von Bauteilen aus Eisenguss," *Leistungen und Ergebnisse. Jahresbericht 2010. Fraunhofer Institut für Fabrikbetrieb und -automatisierung IFF*, vol. 1, pp. 24–25, 2011.
- S. Sauer, D. Berndt, J. Schnee, and C. Teutsch, "Worker assistance and quality inspection - application of optical 3d metrology and augmented reality technologies," in *Proc. of 14th Joint Int. IMEKO TC1, TC7, TC13 Symp. on Intelligent Quality Measurements - Theory, Education and Training 2011*, pp. 112–114, Curran, Red Hook, NY, 2011.
- C. Teutsch, D. Berndt, J. Schnee, M. Hübner, and N. Bachfischer, "Objective evaluation of laser markings for quality control," *Int. Journal of Signal Processing, Image Processing and Pattern Recognition*, vol. 3, pp. 41–49, June 2010.
- C. Teutsch, *Assistenzroboter in Laboren von Life-Science-Unternehmen*, ch. Kamerasystem zur Objekterkennung und Manipulation, pp. 52–62. Fraunhofer Verlag, 2010.
- E. Trostmann, C. Teutsch, and D. Berndt, "Adaptive pre-processing of large point clouds from optical 3d scanners," in *IADIS Int. Conf. Applied Computing (14-16 October 2010, Timisoara, Romania)*, pp. 43–52, IADIS, 2010.
- C. Teutsch, D. Berndt, J. Schnee, M. Hübner, and N. Bachfischer, "Optical inspection of laser markings in the production process," *International Journal of Advanced Science and Technology*, vol. 21, pp. 31–39, August 2010.
- D. Berndt and C. Teutsch, "Optische In-Prozess Technologie ermöglicht 100%-ige Bauteilprüfung in der Gießerei," *Mitteldeutsche Mitteilungen (VDI)*, vol. 18, no. 1, p. 28, 2009.
- J. Schnee, N. Bachfischer, D. Berndt, M. Hübner, and C. Teutsch, "Objective quality evaluation of laser markings for assembly control," in *Int. Conf. on Signal Processing, Image Processing and Pattern Recognition (SIP 2009) (December 10–12, 2009, Jeju Island, Korea)* (D. Slezak, S. Pal, B.-H. Kang, J. Gu, H. Kuroda, and T.-H. Kim, eds.), vol. 61 of *Communications in Computer and Information Science*, pp. 17–24, Springer, Dec. 2009.

- M. Maasland and C. Teutsch, "Kombinierte Geometrie- und Oberflächenprüfung an 3D-Objekten," *QZ Qualität und Zuverlässigkeit*, vol. 53, no. 2, pp. 52–55, 2008.
- O. Lange, C. Teutsch, M. Erhard, and J. Sander, "Mirob: Automatic rapid identification of microorganisms in high through-put," *Industrial Robot: An International Journal*, vol. 35, pp. 311–315, Aug. 2008.
- N. Elkmann, M. Fritzsche, E. Schulenburg, and C. Teutsch, "LISA: ein Assistenzroboter für den Einsatz in Laborumgebungen zur sicheren Mensch-Roboter-Interaktion," in *Proc. 5. Fachtagung Robotik 2008 (Munich, Germany, 11–12 June)*, vol. 2012 of *VDI-Berichte*, pp. 227–230, VDI Wissensforum GmbH, VDI-Verlag GmbH Düsseldorf, 2008.
- C. Teutsch and M. Maasland, "Kombinierte optische Vermessung und Oberflächenprüfung von 3-D-Objekten," in *Handbuch zu Industriellen Bildverarbeitung – Qualitätssicherung in der Praxis* (N. Bauer, ed.), ch. Optische 3-D Messtechnik, pp. 306–312, Stuttgart: Fraunhofer IRB Verlag, 2nd ed., 2008.
- E. Schulenburg, N. Elkmann, M. Fritzsche, A. Girstl, S. Stiene, and C. Teutsch, "Lisa: A robot assistant for life sciences," in *KI 2007: Advances in Artificial Intelligence, 30th Annual German Conf. on AI (Osnabrück, Germany, September 10–13, 2007)*, vol. 4667/2007 of *LNCS*, pp. 502–505, Springer Berlin / Heidelberg, 2007.
- C. Teutsch, D. Berndt, E. Trostmann, and B. Preim, "Adaptive real-time grid generation from 3d line scans for fast visualization and data evaluation," in *Proc. 11th Int. Conf. Information Visualization*, (Washington, DC, USA), pp. 177–184, IEEE Computer Society, 2007.
- M. Fritzsche, E. Schulenburg, N. Elkmann, A. Girstl, S. Stiene, and C. Teutsch, "Safe human-robot interaction in a life science environment," in *Proc. IEEE Int. Workshop on Safety, Security, and Rescue Robotics (SSRR 2007) (Rome, Italy, Sep. 27–29, 2007)*, pp. 1–6, 2007.
- C. Teutsch and M. Maasland, "Kombinierte optische Vermessung und Oberflächenprüfung von 3-D-Objekten," in *Handbuch zu Industriellen Bildverarbeitung – Qualitätssicherung in der Praxis* (N. Bauer, ed.), ch. Optische 3-D Messtechnik, pp. 306–312, Stuttgart: Fraunhofer IRB Verlag, 1st ed., 2007.
- C. Teutsch, *Model-based Analysis and Evaluation of Point Sets from Optical 3D Laser Scanners*, vol. 1 of *Magdeburger Schriften zur Visualisierung*. Shaker Verlag, Dec. 2007.
- E. Schulenburg, N. Elkmann, M. Fritzsche, and C. Teutsch, "A mobile service robot for life science laboratories," in *Proc. 20. Fachgespräch Autonome Mobile Systeme (AMS 2007) (Kaiserslautern, Germany, Oct. 18-19, 2007)*, Informatik aktuell, pp. 315–318, Springer Berlin Heidelberg, 2007.
- D. Berndt, R. Mecke, C. Teutsch, and J. Tuemler, "Assembly assistance with augmented reality: Mobile measurement and testing technology provides an overview," *IFFOCUS - Interactive Human-Machine*, vol. 2, pp. 44–46, 2007.
- C. Teutsch, D. Berndt, A. Sobotta, and S. Sperling, "A flexible photogrammetric stereo vision system for capturing the 3d shape of extruded profiles," in *Proc. Two- and Three-Dimensional Methods for Inspection and Metrology IV (Optics East 2006, October 1-4, 2006, Boston, MA, USA)* (P. S. Huang, ed.), vol. 6382, p. 63820M, SPIE, 2006.
- C. Teutsch, D. Berndt, E. Trostmann, and M. Weber, "Real-time detection of elliptic shapes for automated object recognition and object tracking," in *Proc. of Machine Vision Applications in Industrial Inspection XIV (Electronic Imaging 2006, January 15–19, 2006, San Jose, California,*

USA) (F. Meriaudeau and K. S. Niel, eds.), vol. 6070 of *SPIE Proceedings Series*, (Bellingham, Washington), pp. 171–179, SPIE/IS&T, january 2006.

C. Teutsch, D. Berndt, N. Schmidt, and E. Trostmann, "Automated geometry measurement of wheel rims based on optical 3d metrology," in *Proc. Two- and Three-Dimensional Methods for Inspection and Metrology IV (Optics East 2006, October 1-4, 2006, Boston, MA, USA)* (P. S. Huang, ed.), vol. 6382, p. 63820I, SPIE/IS&T, SPIE, 2006.

C. Teutsch and M. Maasland, "Kombinierte optische Vermessung und Oberflächenprüfung von 3-D-Objekten," *Leitfaden zur Inspektion von Oberflächen mit Bildverarbeitung*, vol. 9, pp. 28–32, May 2006.

O. Lange, M. Erhard, C. Teutsch, and J. Sander, "Roboter sucht nach mikrobien," *Laborpraxis*, vol. 30, no. 9, pp. 28–30, 2006.

C. Teutsch, T. Isenberg, E. Trostmann, M. Weber, T. Strothotte, and D. Berndt, "Evaluation and correction of laser-scanned point clouds," in *Proc. of Videometrics VIII (Electronic Imaging 2005, San Jose, California, USA, 16–20 January, 2005)* (J.-A. Beraldin, S. F. El-Hakim, A. Gruen, and J. S. Walton, eds.), vol. 5665, (Bellingham, Washington), pp. 172–183, SPIE/IS&T, Jan. 2005.

C. Teutsch, D. Berndt, E. Trostmann, and R. Mecke, "A hand-guided flexible laser-scanner for generating photorealistically textured 3D data," in *Proceedings of 3D-NordOst 2005, 7. Anwendungsbezogener Workshop zur Erfassung, Verarbeitung, Modellierung und Auswertung von 3D-Daten*, pp. 37–44, Virtual Working Group 3D, 2005.

C. Teutsch, D. Berndt, E. Trostmann, and M. Weber, "Efficient reconstruction of nurbs surfaces for shape analysis and surface inspection," in *Proc. of Optical 3-D Measurement Techniques VII (Vienna, Austria, October 3–5, 2005)* (A. Gruen and H. Kahmen, eds.), vol. 2, (Vienna), pp. 144–153, TU Vienna, ETH Zurich, 2005.

O. Lange, C. Teutsch, M. Erhard, and J. Sander, "Schnelle automatische Identifizierung von Bakterien und Pilzen," *Bioforum*, vol. 28, pp. 35–37, november 2005.

D. Berndt, A. Fix, E. Trostmann, and C. Teutsch, "3-D image processing as the key for a flexible manufacturing cell for the automated welding of large steel structures," in *Proc. of Optical 3-D Measurement Techniques VII (Vienna, Austria, October 3–5, 2005)* (A. Gruen and H. Kahmen, eds.), vol. 1, (Vienna), pp. 317–326, TU Vienna, ETH Zurich, 2005.

D. Berndt, A. Fix, T. Müller, E. Trostmann, and C. Teutsch, "Optical 3-D metrology for aiding the autonomous welding of steel constructions," in *EOS Conf. on Industrial Imaging and Machine Vision (Munich, Germany, 13–15 June, 2005)*, pp. 12–16, European Optical Society, 2005.

C. Teutsch, D. Berndt, E. Trostmann, and M. Weber, "3D geometry verification in the automotive industry," in *Proceedings of 3D-NordOst 2004, 7. Anwendungsbezogener Workshop zur Erfassung, Verarbeitung, Modellierung und Auswertung von 3D-Daten*, pp. 51–58, Virtual Working Group 3D, 2004.

C. Teutsch, T. Isenberg, E. Trostmann, and M. Weber, "Evaluation and Opimization of Laser Scan Data," in *Proc. of 15. Conference on Simulation and Visualization (Magdeburg, Germany, 4–5 March, 2004)* (T. Schulze, S. Schlechtweg, and V. Hinz, eds.), (Erlangen, San Diego), pp. 311–322, University of Magdeburg, SCS European Publishing House, 2004.

C. Teutsch, "Optimierte Rekonstruktion von 3D-Geometrien aus Laserscan-Daten unter Ausnutzung von Information über den Scan-Prozess," Master's thesis, Otto-von-Guericke-University Magdeburg, Germany, Department of Simulation and Graphics, september 2003.