

A. Refereed Journal Articles

- [1] Chayaopas N, Swarup A, Eastwood KW, Francis P, **Kahrs LA**, Bryan M, Drake J, James AL. *A Novel Instrument for Endoscopic Ear Surgery with a Steerable Flexible Tip: A Pediatric Anatomical Validation Study*. *Otology & Neurotology* (doi: 10.1097/MAO.0000000000003237; Epub ahead of print)
- [2] Fast JF, Dava HR, Ruppel AK, Kundrat D, Krauth M, Laves MH, Spindeldreier S, **Kahrs LA**, Ptok M. *Stereo laryngoscopic impact site prediction for droplet-based stimulation of the laryngeal adductor reflex*, *IEEE Access* 2021;9:112177-112192
- [3] Mattos LS, Acemoglu A, Galdes A, Laborai A, Schoob A, Tamadazte B, Davies B, Wacogne B, Pieralli C, Barbalata C, Caldwell DG, Kundrat D, Pardo D, Grant E, Mora F, Barresi G, Peretti G, Ortiz J, Rabenoroso K, Tavernier L, Pazart L, Fichera L, Guastini L, **Kahrs LA**, Rakotondrabe M, Andreff N, Deshpande N, Gaiffe O, Renevier R, Moccia S, Lescano S, Ortmaier T, Penza V. *μ RALP and Beyond: Micro-Technologies and Systems for Robot-Assisted Endoscopic Laser Microsurgery*. *Front Robot AI*. 2021 Sep 8;8:664655 (19 pages)
- [4] Laves MH, Ihler S, Fast JF, **Kahrs LA**, Ortmaier T. *Recalibration of Aleatoric and Epistemic Regression Uncertainty in Medical Imaging*, *Journal of Machine Learning for Biomedical Imaging* 2021;008:1-26
- [5] Schild LR, Boehm F, Kienle L, Seitz A, **Kahrs LA**, Boeckers TM, Greve J, Hoffmann TK, Schuler PJ. *Evaluation of a curved surgical prototype in a human larynx*. *Eur Arch Otorhinolaryngol* 2021; 278:2927–2935
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- [7] Rau TS, Witte S, Uhlenbusch L, **Kahrs LA**, Majdani O, Lenarz T. *Concept description and accuracy evaluation of a moldable surgical targeting system*. *J Med Imaging*. 2021;8(1):015003 (16 pages).
- [8] Kundrat D, Graesslin R, Schoob A, Friedrich DT, Scheithauer MO, Hoffmann TK, Ortmaier T, **Kahrs LA**, Schuler PJ. *Preclinical Performance Evaluation of a Robotic Endoscope for Non-Contact Laser Surgery*. *Ann Biomed Eng*. 2021; 49(2):585-600
- [9] Schild LR, Boehm F, Boos M, **Kahrs LA**, Coburger J, Greve J, Dürselen L, Hoffmann TK, Schuler PJ. *Adding flexible instrumentation to a curved video laryngoscope – a novel tool for laryngeal surgery*. *Laryngoscope* 2021;131(2):E561-E568
- [10] Fast JF, Westermann KA, Laves MH, Jungheim M, Ptok M, Ortmaier T, **Kahrs LA**. *Droplet applicator module for reproducible and controlled endoscopic laryngeal adductor reflex stimulation*. *Biomicrofluidics* 2020, 14(4):044112 (16 pages)
- [11] Wu GC, Podolsky DJ, Looi T, **Kahrs LA**, Drake JM, Forrest CR. *A 3 mm Wristed Instrument for the da Vinci Robot: Setup, Characterization, and Phantom Tests for Cleft Palate Repair*. *IEEE Transactions on Medical Robotics and Bionics* 2020; 2 (2), 130-139
- [12] Diers D, Fast JF, Götz F, **Kahrs LA**, Miller S, Jungheim M, Ptok M. *Euclidean distances of laryngopharyngeal structures obtained from CT data for preclinical development of laryngoscopic devices*. *Surg Radiol Anat*. 2020; 42(6): 695-700
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- [14] Laves MH, Ihler S, **Kahrs LA**, Ortmaier T. *Quantifying the uncertainty of deep learning-based computer-aided diagnosis for patient safety*. *Current Directions in Biomedical Engineering* 2019; 5(1): 223-226

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- [17] Müller S, **Kahrs LA**, Gaa J, Tauscher S, Kluge M, John S, Rau TS, Lenarz T, Ortmaier T, Majdani O. *Workflow assessment as a preclinical development tool: Surgical process models of three techniques for minimally invasive cochlear implantation*. Int J Comput Assist Radiol Surg. 2019; 14(8):1389-1401
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B. Books, Book Chapters, Edited Books

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C. Conference Papers and (Extended) Abstracts

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- [53] Huang BY, Guo W, Forte V, Davies JC, **Kahrs LA**. *2D and 3D Labelling Methods for Facial Skin Tension Lines*, Proc. 19th Annual Symposium Imaging Network Ontario, p. 143, Mar., 2021
- [54] Guo W, Huang BY, Davies JC, Forte V, **Kahrs LA**. *Augmented Reality Relaxed Skin Tension Lines for Face Surgery - Initial Results on a Mobile Device*, Proc. 19th Annual Symposium Imaging Network Ontario, p. 44, Mar., 2021
- [55] Laves MH, Ihler S, Fast JF, **Kahrs LA**, Ortmaier T. *Well-Calibrated Regression Uncertainty in Medical Imaging with Deep Learning*, Medical Imaging with Deep Learning (MIDL 2020); PMLR 121:393-412
- [56] Laves MH, Ihler S, **Kahrs LA**, Ortmaier T. *Retinal OCT disease classification with variational autoencoder regularization*, International Journal of Computer Assisted Radiology and Surgery 2019; 14(S1): S76-S78
- [57] Laves MH, Ihler S, **Kahrs LA**, Ortmaier T. *Semantic denoising autoencoders for retinal optical coherence tomography*, Proc. SPIE 11078, Optical Coherence Imaging Techniques and Imaging in Scattering Media III, 1107818, 1-4, 2019
- [58] Laves MH, Latus S, Bergmeier J, Ortmaier T, **Kahrs LA**, Schlaefer A. *Endoscopic vs. volumetric OCT imaging of mastoid bone structure for pose estimation in minimally invasive cochlear implant surgery*, International Journal of Computer Assisted Radiology and Surgery 2019; 14(S1): S136-S137
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- [62] Laves MH, **Kahrs LA**, Ortmaier T. *Deep learning based 2.5D flow field estimation for maximum intensity projections of 4D optical coherence tomography*, SPIE Medical Imaging, Image-Guided Procedures, Robotic Interventions, and Modeling, 109510R, 1-7, 2019
- [63] Fast JF, Ruppel AK, Ptok M, Ortmaier T, Jungheim M, **Kahrs LA**. *Endoscopic guidance system for stimulation of the laryngeal adductor reflex by droplet impact*, SPIE Medical Imaging, Image-Guided Procedures, Robotic Interventions, and Modeling, 109510M, 1-10, 2019
- [64] Müller S, Jiang L, Nülle K, Schneider V, Kobler JP, **Kahrs LA**, Ortmaier T. *Automated Mechanism Generation for 3D Printed Parallel Kinematic Patient Specific Stereotactic Frames*, SMIT2018-IBEC2018 Joint Conference, Seoul, South Korea, 2018
- [65] Müller S, Rawohl M, **Kahrs LA**, Ortmaier T. *Robot Based Evaluation of the Quality of Form Closure of Patient Specific Instruments*, SMIT2018-IBEC2018 Joint Conference, Seoul, South Korea, 2018
- [66] Modes V, Ihler S, Ortmaier T, Nabavi A, **Kahrs LA**, Burgner-Kahrs J. *Towards Concentric Tube Robots for Microsurgery: First Results in Eye-to-hand Visual Servoing*, Hamlyn Symposium on Medical Robotics 2018, London, 77-78
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- [71] Müller S, Janka C, **Kahrs LA**, Ortmaier T. *Intraoperative Sterile Molding of Patient Specific Templates for Minimally Invasive Cochlear Implant Surgery*, Proc. Russian German Conference on Biomedical Engineering, 2018
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- [78] Schneider V, Müller S, Nülle K, **Kahrs LA**, Majdani O, Ortmaier T. *Experimental accuracy optimization of a parallel kinematic tool for minimally invasive cochlear-implant surgery*, Proc. 16. Annual Meeting German Society of Computer and Robot Assisted Surgery (CURAC 2017), 202-207
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