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| Titolo | Towards the automatization of cranial implant design in cranioplasty : first challenge, AutoImplant 2020, held in conjunction with MICCAI 2020, Lima, Peru, October 8, 2020, proceedings / / Jianning Li and Jan Egger (editors) |
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| Descrizione fisica | 1 online resource (XVI, 115 p. 76 illus., 72 illus. in color.) |
| Collana | Image Processing, Computer Vision, Pattern Recognition, and Graphics ; ; 12439 |
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| Nota di contenuto | Patient Specific Implants (PSI): Cranioplasty in the Neurosurgical Clinical Routine -- Dataset Descriptor for the AutoImplant Cranial Implant Design Challenge -- Automated Virtual Reconstruction of Large Skull Defects using Statistical Shape Models and Generative Adversarial Networks -- Cranial Implant Design through Multiaxial Slice Inpainting using Deep Learning -- Cranial Implant Design via Virtual Craniectomy with Shape Priors -- Deep Learning Using Augmentation via Registration: 1st Place Solution to the AutoImplant 2020 Challenge -- Cranial Defect Reconstruction using Cascaded CNN with Alignment -- Shape Completion by U-Net: An Approach to the AutoImplant MICCAI Cranial Implant Design Challenge -- Cranial Implant Prediction using Low-Resolution 3D Shape Completion and High-Resolution 2D Refinement -- Cranial Implant Design Using a Deep Learning Method with Anatomical Regularization -- High-resolution Cranial Implant Prediction via Patch-wise Training -- Learning Volumetric Shape Super-Resolution for Cranial Implant Design. |
| Sommario/riassunto | This book constitutes the First Automatization of Cranial Implant Design in Cranioplasty Challenge, AutoImplant 2020, which was held in conjunction with the 23rd International Conference on Medical Image |

Computing and Computer-Assisted Intervention, MICCAI 2020, in Lima, Peru, in October 2020. The challenge took place virtually due to the COVID-19 pandemic. The 10 papers presented together with one invited paper and a dataset descriptor in this volume were carefully reviewed and selected form numerous submissions. This challenge aims to provide more affordable, faster, and more patient-friendly solutions to the design and manufacturing of medical implants, including cranial implants, which is needed in order to repair a defective skull from a brain tumor surgery or trauma. The presented solutions can serve as a good benchmark for future publications regarding 3D volumetric shape learning and cranial implant design.