Deep learning for vascular segmentation and tissue characterization in CT images

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List of publications

Journal articles

Xiaotong Zhang, Alexander Broersen, Hessam Sokooti, Anantharaman Ramasamy, Pieter Kitslaar, Ramya Parasa, Medeni Karaduman, Amear Souded Ali Jan Mohammed, Christos V. Bourantas, and Jouke Dijkstra. "Cross-sectional angle prediction of lipid-rich and calcified tissue on computed tomography angiography images." International Journal of Computer Assisted Radiology and Surgery, 19, no. 5 (2024): 971-981.

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Anantharaman Ramasamy, Hessam Sokooti, **Xiaotong Zhang**, Evangelia Tzorovili, Retesh Bajaj, Pieter Kitslaar, Alexander Broersen, Rajiv Amersey, Ajay Jain, Mick Ozkor, Johan H C Reiber, Jouke Dijkstra, Patrick W Serruys, James C Moon, Anthony Mathur, Andreas Baumbach, Ryo Torii, Francesca Pugliese, Christos V Bourantas. "Novel near-infrared spectroscopy-intravascular ultrasound-based deep-learning methodology for accurate coronary computed tomography plaque quantification and characterization." European Heart Journal Open, 3, no. 5 (2023): oead090.

Anantharaman Ramasamy, Ramya Parasa, Hessam Sokooti, **Xiaotong Zhang**, Ibrahim Halil Tanboga, Pieter Kitslaar, Alexander Broersen, Krishnaraj S Rathod, Rajiv Amersey, Ajay Jain, Mick Ozkor, Johan H C Reiber, Jouke Dijkstra, Patrick W Serruys, James C Moon, Anthony Mathur, Ryo Torii, Francesca Pugliese, Andreas Baumbach, Christos V Bourantas. "Computed tomography versus near-infrared spectroscopy for the assessment of coronary atherosclerosis." EuroIntervention, Dec 2;20(23) (2024):e1465-e1475.

Nathan Angelo Lecaros Yap, Anantharaman Ramasamy, Ibrahim Halil Tanboga, Xingwei He, Murat Cap, Retesh Bajaj, Medeni Karaduman, Ajay Jain, Pieter Kitslaar, Alexander Broersen, **Xiaotong Zhang**, Hessam Sokooti, Johan HC Reiber, Jouke Dijkstra, Mick Ozkor, Patrick W Serruys, James C Moon, Anthony Mathur, Andreas Baumbach, Ryo Torii, Francesca Pugliese, Christos V Bourantas. "Implications of coronary calcification on the assessment of plaque pathology: a comparison of computed tomography and multimodality intravascular imaging." European Radiology, 35, no. 4 (2025): 1745-1760.

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Xiaotong Zhang, Alexander Broersen, Gonnie CM Van Erp, Silvia L. Pintea, and Jouke Dijkstra. "Top-K Maximum Intensity Projection Priors for 3D Liver Vessel Segmentation." In 2025 IEEE 22nd International Symposium on Biomedical Imaging (ISBI), pp. 1-5. IEEE, 2025.

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Journal abstract

Anantharaman Ramasamy, Hessam Sokooti, **Xiaotong Zhang**, Evangelia Tzorovili, Retesh Bajaj, Pieter Kitslaar, Rajiv Amersey et al. "TCT-250 A Novel Coronary Computed Tomography Angiography Deep-Learning Methodology for Coronary Atheroma Quantification and Characterization Trained Using Near-Infrared Spectroscopy-Intravascular Ultrasound." Journal of the American College of Cardiology 80, no. 12_Supplement (2022): B98-B99.

Anantharaman Ramasamy, Hessam Sokooti, **Xiaotong Zhang**, Evangelia Tzorovili, Retesh Bajaj, Pieter Kitslaar, Alexander Broersen et al. "OP1 A novel coronary computed tomography angiography deep-learning methodology for coronary atheroma assessment trained using near-infrared spectroscopy-intravascular ultrasound." Heart, 108, no. Suppl 2 (2022): A1-A1.

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Curriculum Vitae

Xiaotong Zhang was born in Jining, Shandong Province, China, in August 1995. She obtained her high school diploma in June 2013. In September 2013, she began her undergraduate studies in Biomedical Engineering at Shandong First Medical University and graduated in June 2017. In September 2017, she began her master's studies in Biomedical Engineering at Northeastern University and obtained her degree in January 2020. During her master's studies, she received the National Graduate Scholarship in 2019. After obtaining her master's degree, she worked in industry as an algorithm development engineer until July 2021. In September 2021, she began her PhD studies at Leiden University Medical Center in the Netherlands. Her PhD research focuses on the characterization of vascular plaques and vessel segmentation using deep learning techniques.