**Title**: Tooth segmentation and datasets in oral health.

**Presenter**: Prof. Huiyu Zhou, School of Computing and Mathematical Sciences, University of Leicester, United Kingdom.

**Abstract of the talk**:

Oral health is vital and teeth have a direct impact on an individual’s quality of life. In recent years, artificial intelligence has been applied to diagnosis and treatment of oral diseases, and among these technology advancements, intelligent tooth segmentation technologies play a crucial role in diagnosis of oral diseases and clinical surgery. In this talk, first of all, Zhou introduces a large-scale STS 2023 dental dataset, including over 6500 2D PXI and 580 3D CBCT volumes (8500+ slices) with partial annotations. Zhou then reports a comprehensive benchmark for 2D and 3D tooth segmentation, covering various age groups and tooth conditions. Top ranking solutions will be discussed with respect to their individual characteristics. Afterwards, Zhou presents an attention-based benchmark to segment tooth regions on the CTooth dataset. Finally, before concluding this talk, Zhou reports a 3D dental dataset CTooth+ with annotated 3D structures of teeth, which are evaluated using fully-supervised, semi-supervised and active learning methods as benchmarks.

**Bio of the presenter**:

Prof. Huiyu Zhou received a Bachelor of Engineering degree in Radio Technology from Huazhong University of Science and Technology of China, and a Master of Science degree in Biomedical Engineering from University of Dundee of United Kingdom, respectively. He was awarded a Doctor of Philosophy degree in Computer Vision from Heriot-Watt University, Edinburgh, United Kingdom. Prof. Zhou currently is a full Professor at School of Computing and Mathematical Sciences, University of Leicester, United Kingdom. He has received Distinguished AI Scholar and Exemplary Awards of NAAI in 2025. His research work has been or is being supported by UK EPSRC, ESRC, AHRC, MRC, EU, Innovate UK, Royal Society, British Heart Foundation, Leverhulme Trust, Puffin Trust, Alzheimer’s Research UK, Invest NI and industry. Homepage: <https://le.ac.uk/people/huiyu-zhou>