



INTRODUCTION

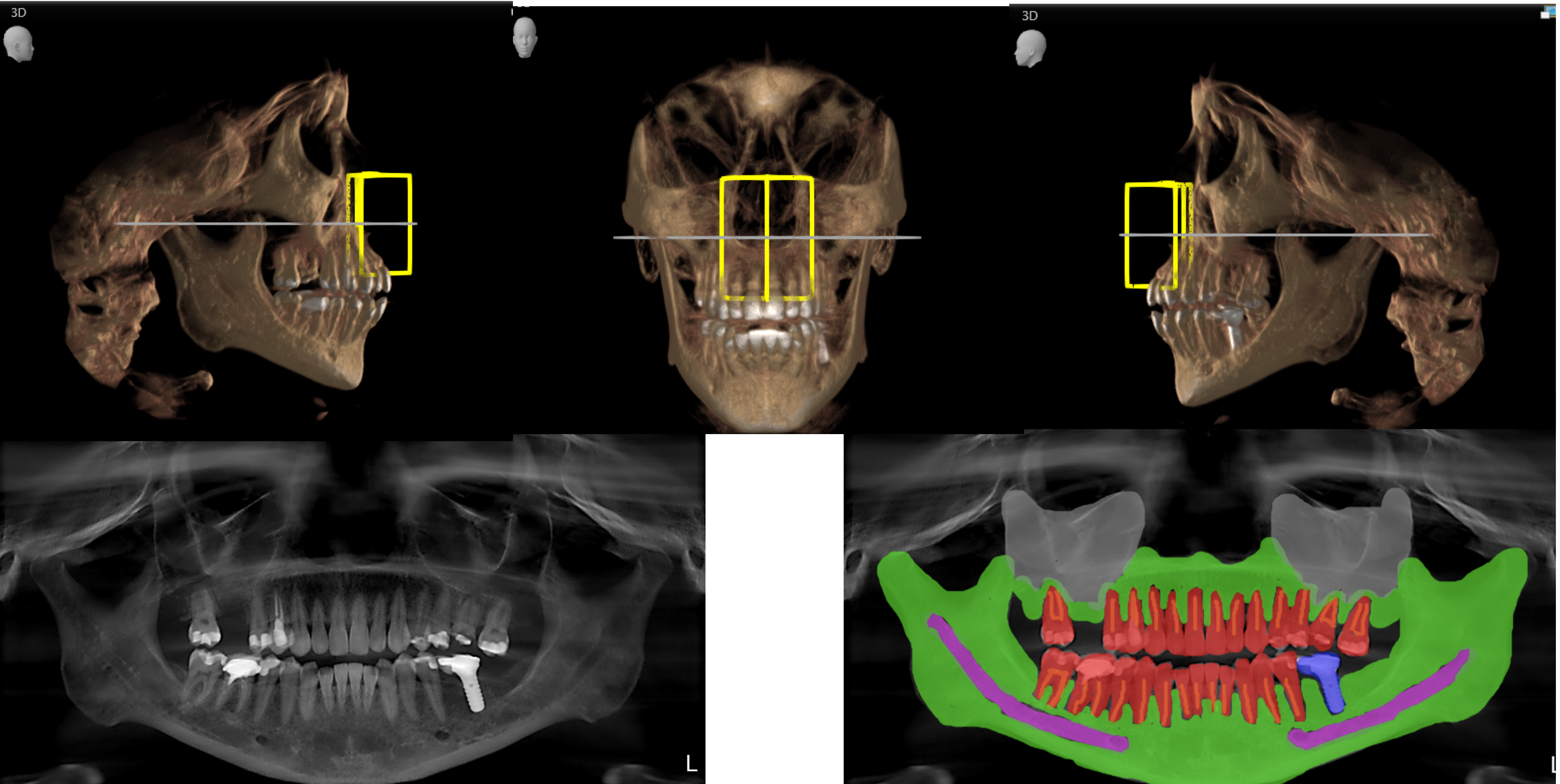
OBJECTIVE

METHODOLOGY

Artificial intelligence (AI) is a field of computer science aimed at executing various specific functions that stand in need of human intelligence. It imitates human intelligence and improves its features acquired over time using the deep learning methods.

This program is aiming to help clinicians to improve the quality of their diagnoses, save time, increase profitability, work faster. Thus, improve the dentist’s work and patient care.

CBCT Scan



Original Panoramic

Full anatomical
masking

Software annotation

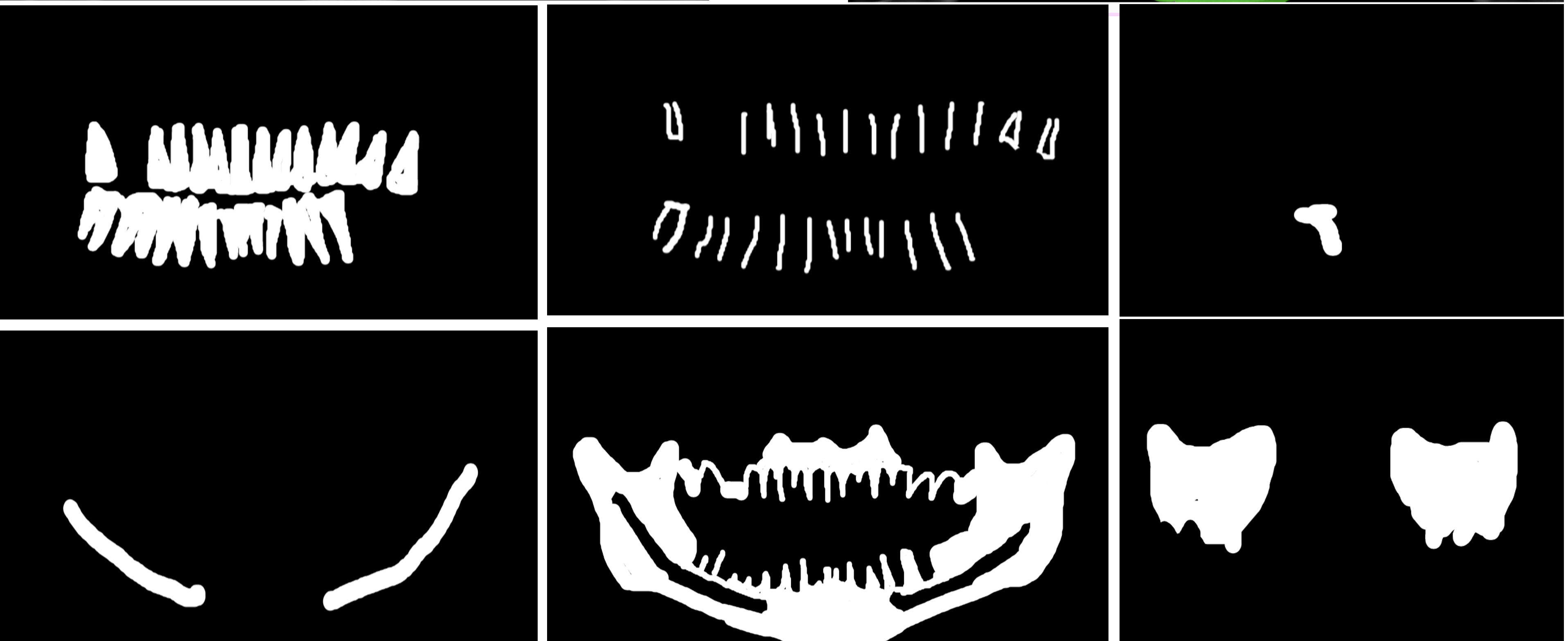


Fig.1: The figure shows an example of analyzed OPG from a CBCT scan using full mask obtained by manual labeling and software annotation. From left to right column (teeth, root canals, dental restorations, major nerves, bone structure, and sinus (1-6)).

ANALYSIS

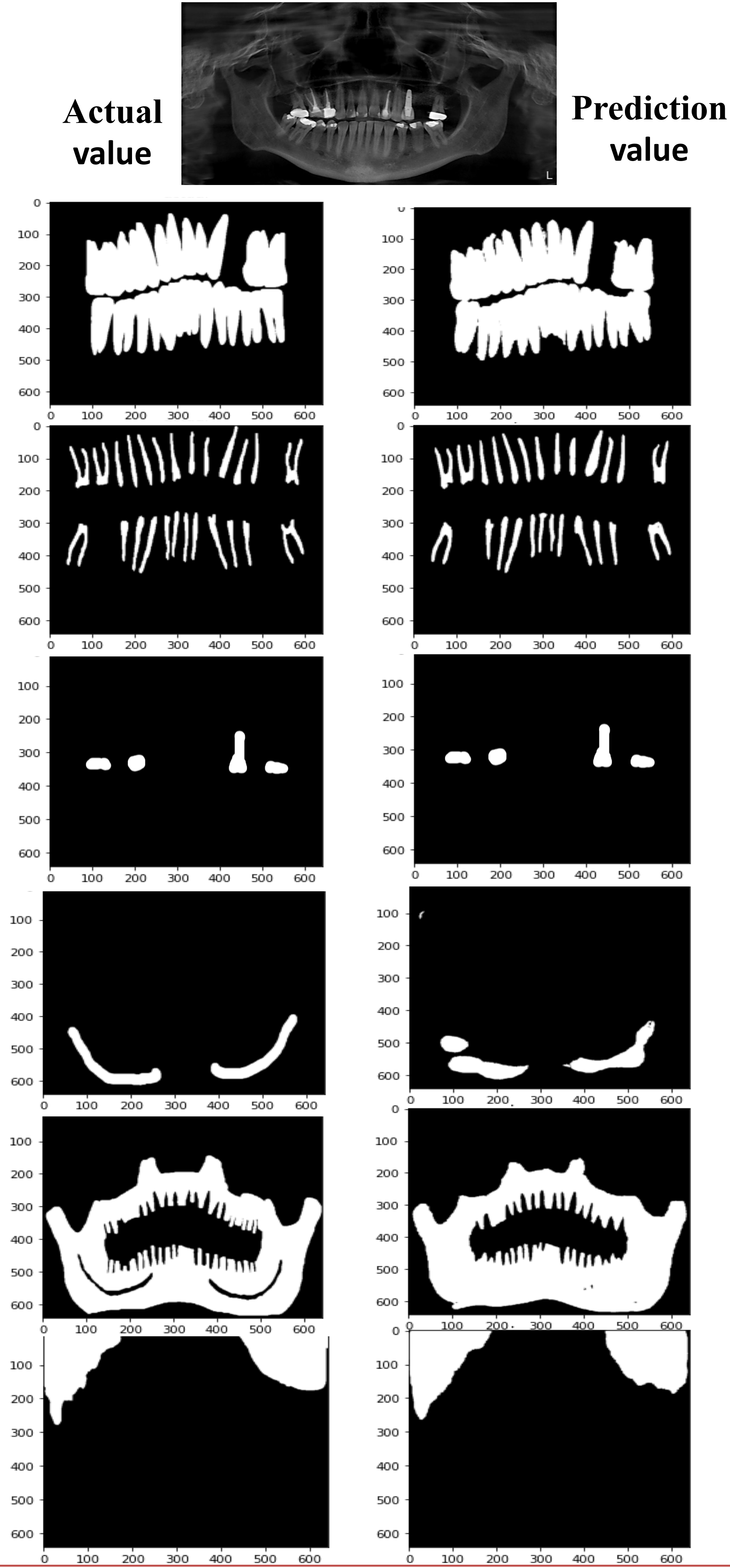
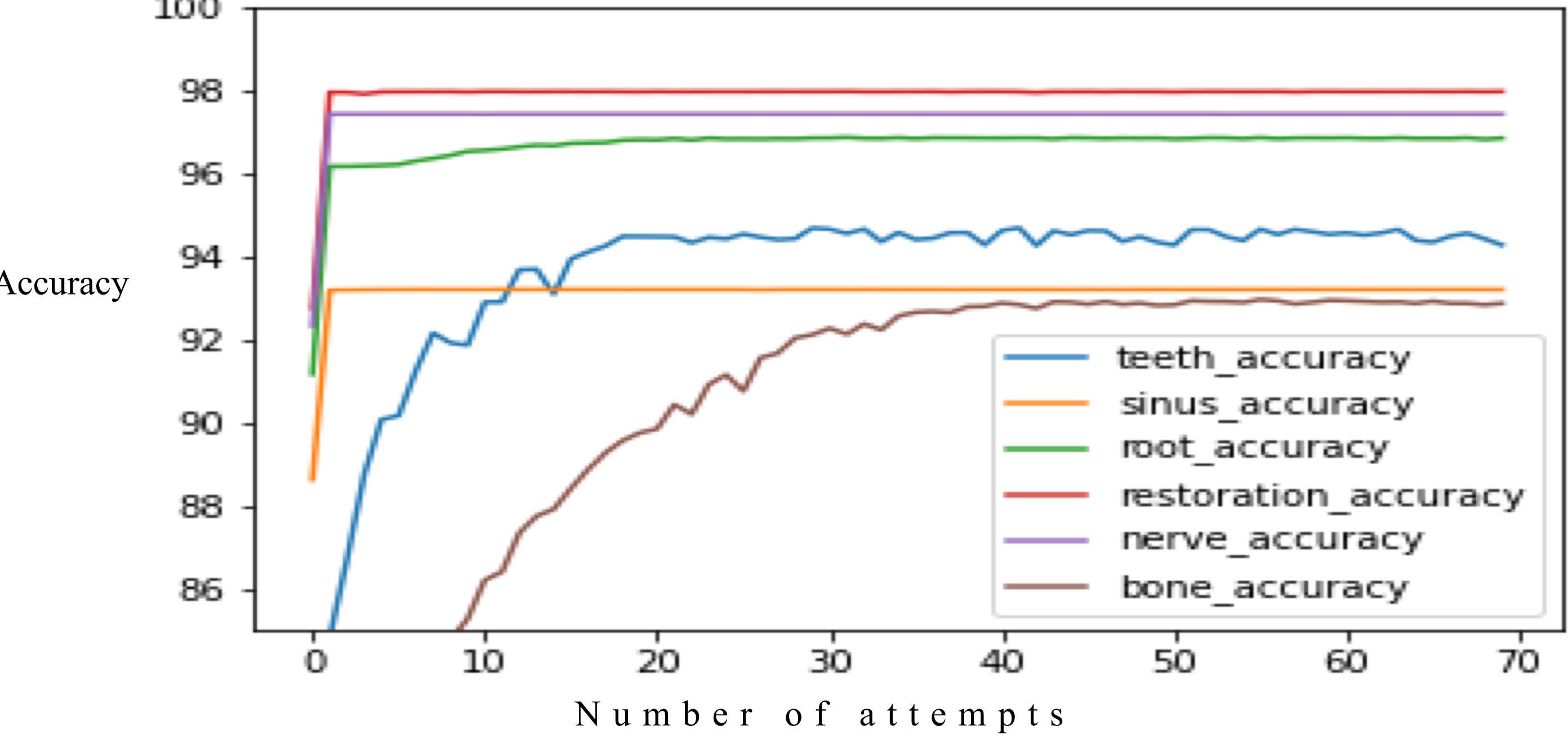


Table. 1: Augmentation U-NET training results

Augmentations	Teeth	Root	Restoration	BONE	Nerve	Sinus
Blur	89.74	79.55	91.82	82.26	44.58	87.19
Elastic Transform	76.56	54.23	84.73	69.71	44.40	78.81
Horizontal	83.47	61.92	45.46	77.91	45.46	91.90
Vertical	75.38	60.31	86.36	67.68	44.99	48.20
Sharpen	86.11	79.54	89.32	82.09	38.20	88.43
Shift Scale Rotate	74.65	54.67	84.52	66.16	45.14	74.01

Fig. 2: Comparing Accuracies Using IOU Method



References:
1. Abdi AH, Kasaei S, Mehdizadeh M. Automatic segmentation of mandible in panoramic x-ray. Imaging (Bellingham). 2015 Oct;2(4):044003. doi: 10.1117/1.JMI.2.4.044003. Epub 2015 Nov 26587551; PMID: PMC4652330

