

## SUPPLEMENTARY FILES

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**Supplementary Table 1** Agreement among three observers demonstrated with Fleiss Kappa statistics

Interobserver Agreement (Fleiss Kappa)														
No	Tooth Status					Periodontal Status								
	A/P	M	R	S	E	Surface	Stage					Pattern		
							A/P	1	2	3	4	a	b	c
18	0.96	0.96	1.00	*	1.00	Distal	1.00	0.96	1.00	1.00	1.00	1.00	0.97	*
						Mesial	0.90	0.96	1.00	1.00	*	1.00	0.97	*
17	0.95	0.95	0.97	1.00	0.95	Distal	1.00	0.95	1.00	1.00	0.90	1.00	0.94	1.00
						Mesial	0.94	0.98	1.00	1.00	0.75	*	0.97	*
16	0.94	0.94	1.00	0.93	1.00	Distal	1.00	0.96	0.95	1.00	1.00	*	0.98	1.00
						Mesial	1.00	0.93	0.90	1.00	*	*	0.96	*
15	0.96	0.95	1.00	0.95	1.00	Distal	1.00	0.98	0.96	1.00	0.74	*	0.97	*
						Mesial	0.97	1.00	1.00	*	0.00	*	0.97	*
14	0.93	1.00	1.00	0.79	0.96	Distal	1.00	1.00	1.00	1.00	1.00	*	1.00	1.00
						Mesial	0.98	1.00	1.00	*	*	*	1.00	*
13	0.95	0.89	1.00	1.00	1.00	Distal	1.00	0.94	0.95	1.00	1.00	*	1.00	1.00
						Mesial	0.98	0.97	0.96	*	0.00	*	0.98	*
12	0.94	1.00	1.00	0.89	1.00	Distal	1.00	0.95	0.92	1.00	1.00	*	1.00	*
						Mesial	1.00	0.95	0.96	1.00	*	*	0.98	1.00
11	0.89	0.87	1.00	0.87	1.00	Distal	1.00	0.98	1.00	1.00	1.00	*	0.98	1.00
						Mesial	1.00	0.96	0.96	1.00	0.00	*	0.97	1.00
28	0.93	0.93	1.00	*	1.00	Distal	1.00	0.93	1.00	*	*	*	0.96	*
						Mesial	1.00	0.95	1.00	1.00	1.00	*	0.97	*
27	0.95	0.95	0.98	1.00	0.96	Distal	0.96	0.93	1.00	1.00	*	0.00	0.93	0.00
						Mesial	0.98	0.96	1.00	1.00	1.00	*	0.95	0.00
26	0.94	0.96	0.97	0.87	1.00	Distal	0.94	0.95	1.00	1.00	*	*	0.96	*
						Mesial	1.00	0.96	0.97	1.00	0.85	*	0.98	*
25	0.96	0.94	1.00	0.90	1.00	Distal	0.98	1.00	1.00	1.00	*	*	1.00	*
						Mesial	1.00	0.96	0.95	*	1.00	*	1.00	*
24	0.90	1.00	1.00	0.81	0.94	Distal	1.00	1.00	1.00	*	*	*	1.00	*
						Mesial	1.00	1.00	1.00	*	1.00	*	1.00	1.00
23	0.93	0.79	1.00	1.00	0.96	Distal	0.98	1.00	1.00	*	*	*	1.00	**

						<b>Mesial</b>	1.00	1.00	0.92	0.80	1.00	*	0.98	1.00
<b>22</b>	0.91	1.00	1.00	0.89	0.93	<b>Distal</b>	0.98	1.00	1.00	1.00	*	*	1.00	1.00
						<b>Mesial</b>	1.00	0.98	1.00	1.00	1.00	*	0.98	1.00
<b>21</b>	0.88	0.87	1.00	0.91	0.91	<b>Distal</b>	1.00	0.98	1.00	1.00	*	*	0.98	1.00
						<b>Mesial</b>	1.00	0.96	0.97	1.00	0.87	*	0.97	1.00
<b>38</b>	0.96	0.97	1.00	*	0.98	<b>Distal</b>	0.97	0.97	1.00	1.00	**	*	0.98	**
						<b>Mesial</b>	0.97	0.98	1.00	1.00	1.00	*	0.98	**
<b>37</b>	0.94	0.97	0.95	0.91	0.95	<b>Distal</b>	0.97	0.97	1.00	*	*	*	0.97	**
						<b>Mesial</b>	0.98	0.96	1.00	*	1.00	*	0.96	1.00
<b>36</b>	0.95	1.00	0.97	0.92	0.80	<b>Distal</b>	0.96	0.94	0.94	*	*	*	0.96	1.00
						<b>Mesial</b>	0.98	0.95	1.00	*	1.00	*	0.95	1.00
<b>35</b>	0.93	0.92	1.00	1.00	0.94	<b>Distal</b>	0.97	0.94	0.96	*	0.00	*	0.94	1.00
						<b>Mesial</b>	0.98	0.96	1.00	*	1.00	1.00	0.97	1.00
<b>34</b>	0.95	1.00	1.00	0.84	0.94	<b>Distal</b>	0.93	0.98	1.00	*	*	1.00	0.98	1.00
						<b>Mesial</b>	1.00	1.00	1.00	*	1.00	*	1.00	1.00
<b>33</b>	0.91	0.87	1.00	1.00	0.93	<b>Distal</b>	0.98	0.98	0.94	1.00	0.00	*	0.98	1.00
						<b>Mesial</b>	1.00	1.00	1.00	1.00	0.85	*	0.98	1.00
<b>32</b>	0.91	0.95	1.00	0.91	0.80	<b>Distal</b>	0.96	1.00	1.00	1.00	1.00	*	1.00	1.00
						<b>Mesial</b>	1.00	0.98	0.91	1.00	1.00	*	1.00	1.00
<b>31</b>	0.92	0.91	1.00	0.94	1.00	<b>Distal</b>	1.00	1.00	1.00	1.00	1.00	*	0.98	0.90
						<b>Mesial</b>	0.96	1.00	1.00	1.00	1.00	*	0.98	0.90
<b>48</b>	0.95	0.96	0.92	*	0.98	<b>Distal</b>	0.97	0.70	1.00	1.00	0.00	*	0.92	*
						<b>Mesial</b>	0.94	0.94	1.00	1.00	*	*	0.96	*
<b>47</b>	0.97	0.98	0.91	0.91	1.00	<b>Distal</b>	0.98	0.94	0.95	*	1.00	*	0.97	*
						<b>Mesial</b>	0.95	0.95	0.90	*	*	*	0.96	1.00
<b>46</b>	0.95	1.00	0.87	0.91	1.00	<b>Distal</b>	0.98	0.95	1.00	1.00	0.75	*	0.95	1.00
						<b>Mesial</b>	0.98	0.95	0.85	1.00	*	1.00	0.97	0.43
<b>45</b>	0.95	0.90	1.00	1.00	1.00	<b>Distal</b>	1.00	0.94	0.95	1.00	0.23	1.00	0.90	1.00
						<b>Mesial</b>	0.98	1.00	1.00	1.00	0.75	1.00	0.98	1.00
<b>44</b>	0.95	0.95	1.00	0.91	1.00	<b>Distal</b>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
						<b>Mesial</b>	0.98	1.00	1.00	1.00	*	*	1.00	1.00
<b>43</b>	0.94	0.87	1.00	1.00	1.00	<b>Distal</b>	1.00	1.00	1.00	1.00	0.75	*	0.98	1.00
						<b>Mesial</b>	0.98	0.98	0.90	1.00	*	*	1.00	1.00
<b>42</b>	0.94	0.94	1.00	0.93	1.00	<b>Distal</b>	1.00	0.98	1.00	1.00	0.00	*	0.98	0.85
						<b>Mesial</b>	0.96	0.98	1.00	1.00	0.00	*	0.98	0.85
<b>41</b>	0.94	0.90	1.00	1.00	1.00	<b>Distal</b>	1.00	1.00	1.00	1.00	1.00	*	1.00	1.00
						<b>Mesial</b>	0.95	1.00	1.00	1.00	1.00	*	1.00	1.00

A/P. Absence/Presence; a. Vertical; b. Horizontal; c. Mixed

\*: No measures of association are computed for the cross tabulation of X \* Y. At least one variable in each 2-way table upon which measures of association are computed is a constant.

**Supplementary Table 2** Agreement between the ground truth and model's results are demonstrated with Cohen's Kappa coefficients

Ground Truth vs AI Software (Cohen's Kappa)														
No	Tooth Status					Periodontal Status								
						Surface	Stage					Pattern		
	A/P	M	R	S	E		A/P	1	2	3	4	a	b	c
18	0.96	0.96	1.00	1.00	1.00	Distal	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*
						Mesial	1.00	1.00	1.00	1.00	*	1.00	1.00	*
17	0.95	0.93	1.00	1.00	1.00	Distal	0.94	1.00	0.90	1.00	1.00	1.00	0.97	1.00
						Mesial	0.94	1.00	0.90	1.00	1.00	*	0.97	*
16	0.91	0.91	0.95	0.88	1.00	Distal	0.97	1.00	1.00	1.00	1.00	*	1.00	1.00
						Mesial	0.97	0.97	1.00	1.00	*	*	0.97	*
15	0.94	0.93	1.00	0.92	1.00	Distal	0.95	1.00	0.94	1.00	0.80	*	0.95	*
						Mesial	0.92	1.00	0.85	*	0.00	*	0.91	*
14	0.93	1.00	1.00	0.66	1.00	Distal	0.93	1.00	0.93	1.00	1.00	*	0.97	0.00
						Mesial	0.92	1.00	0.92	*	*	*	0.96	*
13	0.93	0.82	0.85	1.00	1.00	Distal	0.96	1.00	1.00	1.00	1.00	*	1.00	0.00
						Mesial	0.97	1.00	1.00	*	0.00	*	0.97	*
12	0.85	1.00	1.00	0.71	1.00	Distal	0.94	1.00	0.94	1.00	1.00	*	0.97	*
						Mesial	0.95	1.00	0.94	1.00	*	*	0.97	1.00
11	0.89	0.79	0.90	1.00	1.00	Distal	0.95	1.00	0.94	1.00	1.00	*	0.97	1.00
						Mesial	0.95	0.97	0.94	1.00	0.00	*	0.98	1.00
28	0.96	0.96	1.00	*	1.00	Distal	0.86	1.00	0.85	*	*	*	0.94	*
						Mesial	0.94	1.00	0.85	1.00	1.00	*	0.95	*
27	0.92	0.92	0.83	1.00	0.94	Distal	0.94	1.00	0.95	1.00	*	0.00	0.92	0.00
						Mesial	0.95	1.00	0.95	1.00	1.00	*	0.95	0.00
26	0.91	0.94	0.78	0.94	1.00	Distal	1.00	1.00	1.00	1.00	*	*	1.00	*
						Mesial	1.00	1.00	1.00	1.00	0.80	*	0.97	*
25	0.91	1.00	0.90	0.82	1.00	Distal	0.94	1.00	0.94	1.00	*	*	0.97	*
						Mesial	0.92	1.00	0.93	*	1.00	*	0.96	*
24	0.89	1.00	0.85	0.71	1.00	Distal	0.93	1.00	0.94	*	*	*	0.97	*
						Mesial	0.93	1.00	0.94	*	1.00	*	1.00	0.96
23	0.93	0.66	0.85	1.00	1.00	Distal	0.93	1.00	0.92	*	*	*	0.96	*
						Mesial	0.95	1.00	0.94	1.00	1.00	*	0.98	1.00
22	0.91	1.00	1.00	0.82	1.00	Distal	0.95	1.00	0.92	1.00	*	*	0.97	1.00
						Mesial	0.95	1.00	0.94	1.00	1.00	*	0.97	1.00
21	0.91	0.79	0.80	1.00	1.00	Distal	0.95	1.00	0.94	1.00	*	*	0.98	1.00
						Mesial	0.95	1.00	0.95	1.00	1.00	*	0.98	1.00
38	0.94	0.95	0.85	*	0.97	Distal	0.95	0.95	1.00	1.00	*	*	0.96	*
						Mesial	0.96	0.97	1.00	1.00	1.00	*	0.97	*

<b>37</b>	0.94	0.95	0.96	0.85	1.00	<b>Distal</b>	0.95	0.97	1.00	*	*	*	0.98	*
						<b>Mesial</b>	0.95	0.98	1.00	*	1.00	*	0.98	1.00
<b>36</b>	0.95	1.00	1.00	0.88	1.00	<b>Distal</b>	1.00	1.00	1.00	*	*	*	1.00	1.00
						<b>Mesial</b>	1.00	1.00	1.00	*	1.00	*	1.00	1.00
<b>35</b>	0.93	0.88	1.00	1.00	1.00	<b>Distal</b>	0.95	0.98	1.00	*	0.00	*	0.96	1.00
						<b>Mesial</b>	0.97	0.97	1.00	*	1.00	1.00	0.97	1.00
<b>34</b>	0.92	1.00	1.00	0.74	1.00	<b>Distal</b>	0.98	0.97	1.00	*	*	1.00	0.97	1.00
						<b>Mesial</b>	0.97	0.97	1.00	*	1.00	*	0.97	1.00
<b>33</b>	0.91	0.79	1.00	1.00	1.00	<b>Distal</b>	0.97	0.97	1.00	1.00	0.00	*	0.94	1.00
						<b>Mesial</b>	0.97	0.97	1.00	1.00	0.80	*	0.94	1.00
<b>32</b>	0.91	0.92	1.00	0.85	1.00	<b>Distal</b>	0.94	0.97	1.00	1.00	1.00	*	0.97	1.00
						<b>Mesial</b>	0.95	0.94	0.85	1.00	1.00	*	0.97	1.00
<b>31</b>	0.92	0.94	1.00	0.90	1.00	<b>Distal</b>	0.94	0.97	1.00	1.00	1.00	*	0.94	0.85
						<b>Mesial</b>	0.94	0.97	1.00	1.00	1.00	*	0.94	0.85
<b>48</b>	0.92	0.91	0.85	*	1.00	<b>Distal</b>	0.95	0.56	1.00	1.00	0.00	*	0.92	*
						<b>Mesial</b>	0.91	0.96	1.00	1.00	*	*	0.97	*
<b>47</b>	0.95	0.96	0.90	0.85	1.00	<b>Distal</b>	0.94	0.97	1.00	*	1.00	*	0.98	*
						<b>Mesial</b>	0.95	1.00	0.93	*	*	*	0.98	1.00
<b>46</b>	0.91	1.00	0.89	0.81	1.00	<b>Distal</b>	0.94	1.00	0.88	1.00	0.66	*	0.98	1.00
						<b>Mesial</b>	0.94	0.97	1.00	1.00	*	1.00	0.98	0.90
<b>45</b>	0.93	0.85	0.90	1.00	1.00	<b>Distal</b>	0.95	0.91	0.85	1.00	-0.03	1.00	0.87	1.00
						<b>Mesial</b>	0.97	1.00	1.00	1.00	-0.01	1.00	0.97	1.00
<b>44</b>	0.93	0.92	0.88	0.85	1.00	<b>Distal</b>	0.97	1.00	1.00	1.00	0.66	1.00	1.00	1.00
						<b>Mesial</b>	0.97	0.97	1.00	1.00	*	*	0.97	1.00
<b>43</b>	0.91	0.79	0.85	1.00	1.00	<b>Distal</b>	0.97	0.97	1.00	1.00	0.66	*	0.95	1.00
						<b>Mesial</b>	0.97	0.97	1.00	1.00	*	*	0.97	1.00
<b>42</b>	0.91	0.90	1.00	0.88	1.00	<b>Distal</b>	0.97	0.94	1.00	1.00	0.00	*	0.94	0.80
						<b>Mesial</b>	0.95	0.94	1.00	1.00	0.00	*	0.94	0.80
<b>41</b>	0.91	0.85	1.00	1.00	1.00	<b>Distal</b>	0.95	0.97	1.00	1.00	1.00	*	0.97	1.00
						<b>Mesial</b>	0.95	0.97	1.00	1.00	1.00	*	0.97	1.00

A/P. Absence/Presence; a. Vertical; b. Horizontal; c. Mixed

\*: No measures of association are computed for the cross tabulation of X \* Y. At least one variable in each 2-way table upon which measures of association are computed is a constant.