TOOTH FAIRY2 CHALLENGE

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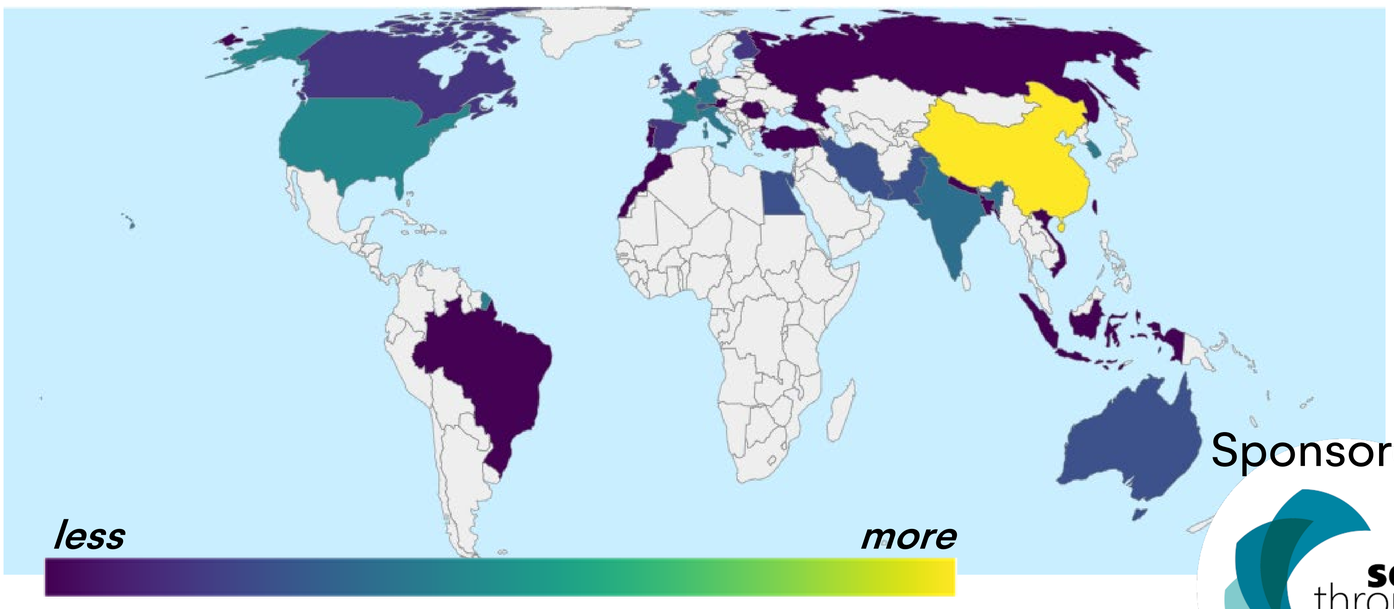
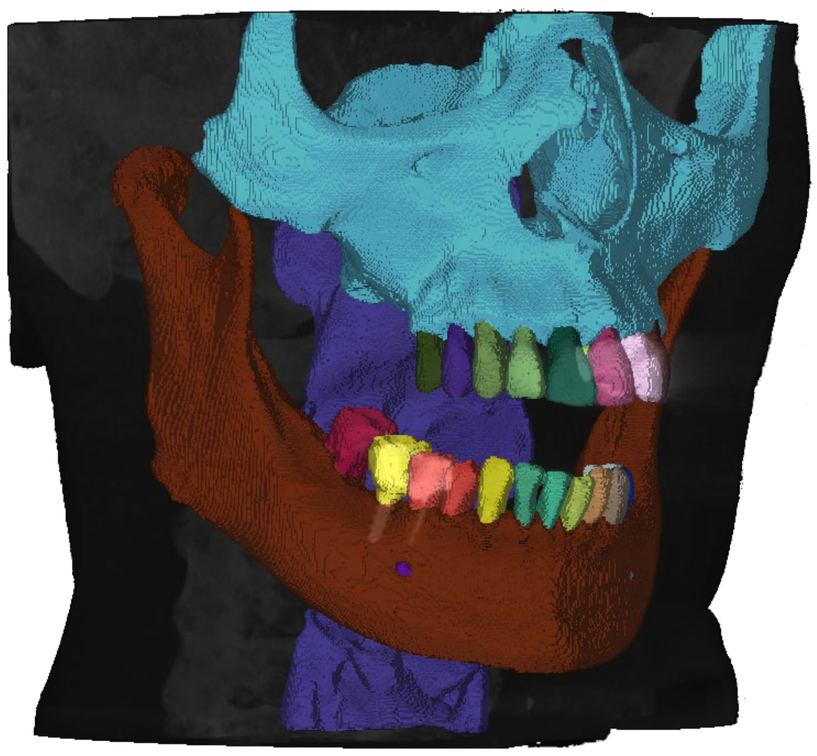
About the Challenge

This is the **second edition** of the **ToothFairy challenge** organized by the **University of Modena and Reggio Emilia** with the collaboration of **Radboud University Medical Center.** The challenge is hosted by the **Grand-Challenge** platform and concerns the **multi-structure segmentation of maxillofacial structures in CBTC volumes**.





Submissions

Preliminary Phase: 164 (31 unique groups)
Final Test Phase: 132 (26 unique groups)

Post Challenge Submissions are Still Open!

Sponsored by: see through

The ToothFairy2 Dataset

SCAN ME

The dataset comprises **480 volumes**, with a total of **42 classes annotations** comprising of: Background, Jaws, Inferior Alveolar Canals, Maxillary Sinus, Pharynx, Bridges, Crowns, Implants, and Upper and Lower Teeth (Wisdom Teeth included). A total of **50** additional private **test volumes** have been annotated. Data is provided in the **nnUNet dataset format**, with **.mha** data format.

```
ToothFairy2 Dataset
|-- imagesTr
|   |-- ToothFairy2F_001.mha
|   `-- ...
|-- labelsTr
|   |-- ToothFairy2F_001.mha
|   `-- ...
`-- dataset.json
```

Ranking Schema and Prizes

The ranking schema involves:

1. For **each class** and for **each volume**, calculate the **Dice score (DSC)** and the **HD95**, along with the **maximum used memory (Mem)**, and the total **execution time (Time)**;
2. **Averaging** the **DSC** and the **HD95** for **each class** across all volumes;
3. Ranking all the DSC, HD95, Mem, and Time, independently;
4. Averaging the rankings obtained at point **3 for each DSC and HD95** to produce the final rank;
5. If two or more final ranks obtained at point 4 are equal, compute the average of the rankings obtained for **Mem and Time to break ties**;
6. If two or more ranks are still equal, it is a tie: the prize will be evenly split.

SCAN ME

The winners of the challenge are:

	Method	Last Avg. Rank*	Last Avg. DSC	Last Avg. HD95	Best Avg. Rank†	Best Avg. DSC	Best Avg. HD95
1.500€	Fabian Isensee et. al. (Germany)	4.5 (1)	0.925 ± 0.311 (1)	18.473 ± 22.663 (4)	4.9 (2)	0.925 ± 0.311 (1)	18.473 ± 22.663 (4)
1.000€	Yuxian Jiang et. al. (China)	4.8 (2)	0.917 ± 0.254 (2)	17.581 ± 22.865 (2)	5.0 (3)	0.917 ± 0.254 (3)	17.581 ± 22.865 (2)
500€	Haoshen Wang et. al. (China)	5.2 (3)	0.911 ± 0.294 (3)	17.233 ± 23.886 (1)	4.0 (1)	0.924 ± 0.294 (2)	8.999 ± 18.689 (1)

* Is the official challenge ranking. It considers the last submission for each team
† Is the average ranking obtained considering the best submission for each team

ToothFairy3 is *Coming Soon!*

We are working hard to make it possible!