# Supplementary – One-Shot Doc Snippet Detection: Powering Search in Document Beyond Text

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# 1. Additional Architectural Details

# 1.1. Feature Extractors.

In this section, we provide additional details about the backbones in the proposed MONOMER. We discuss the hyperparameter choices in the *Image Encoder*, followed by the *Text Encoder* and finally the *Layout Encoder*. Please note that the hyperparameters are kept consistent across experiments on all the datasets.

### 1.1.1 Image Features

The image encoder is a DiT-backbone with encoder-only architecture having 4 layers, each containing 4 attention heads with model dimension of 512. The encoder takes 3 channel document image resized (using bi-cubic interpolation) to  $224 \times 224$  resolution which is further cut into  $16 \times 16$ sized patches and outputs a token sequence of length 197. The 197 tokens are formed as follows  $-\frac{224\times224}{16\times16}+1$ , where the additional token corresponds to the CLS token as in the original BEiT [1]. We choose a pretrained DiT base model for our experiments that has a hidden dimension of 768. Since both query image  $Q_i^{inp}$  and target image  $T_i^{inp}$ are preprocessed to the same dimension, we obtain two feature vectors  $Q_v$ ,  $T_v$  each of size  $BS \times 197 \times 1024$ , where 1024 is the maximum sequence length and BS denotes the batch size. Note that the maximum sequence length is a hyperparameter choice that is chosen based on the maximum number of text-blocks in the target document. The encodings are then padded to final vectors  $Q_v, T_v$  of size  $BS \times 1024 \times 1024$  each. The rationale behind doing so is to conveniently be able to perform the subsequent crossattention with different modalities. We can summarize the

sequence of operations as follows -

$$Q_v = pad(D(Q_i^{inp})) \in \mathcal{R}^{1024 \times 1024} \tag{1}$$

$$T_v = pad(D(T_i^{inp})) \in \mathcal{R}^{1024 \times 1024}$$

$$\tag{2}$$

where D is the DiT image encoder and pad is the padding operation.

### 1.1.2 Text Features

We use a pretrained BeRT-based sentence transformer [5] that generates 768 dimensional embedding for a given block of text. The continuous blocks of text in the document are fed into this encoder to generate token sequence  $T_t^{inp}$ ,  $Q_t^{inp}$  of dimension  $BS \times text_t \times 768$  and  $BS \times text_q \times 768$  respectively, where  $text_t$  is the number of text-blocks in the target document and  $text_q$  is the number of text-blocks in the target document and  $text_q$  is the number of text-blocks in the query patch. Additionally, we pad both  $T_t^{inp}$ ,  $Q_t^{inp}$  to a constant size of  $BS \times 1024 \times 768$ . Unlike all the other MONOMER parameters, the text encoder weights are kept frozen. Mathematically, text encoding is represented as follows –

$$Q_t = B(pad(Q_t^{inp})) \in \mathcal{R}^{1024 \times 768}$$
(3)

$$T_t = B(pad(T_t^{inp})) \in \mathcal{R}^{1024 \times 768}$$
(4)

where  $Q_t, T_t$  are the final query and target text features and B is the BeRT text encoder.

### 1.1.3 Bounding Box Features

We leverage a ViT-like [6] architecture to encode the bounding box (spatial) information in the target document and query patch. We implement an encoder-only transformer architecture with 4 layers, 4 heads and hidden dimension of 1024. It takes bounds of the target  $T_s^{inp}$  and query  $Q_s^{inp}$  of size  $BS \times box_t \times 4$ ,  $BS \times box_q \times 4$ , where  $box_t$ ,  $box_q$  are the

<sup>\*</sup>These authors contributed equally to this work

number of bounding boxes in target and query respectively. Similar to the text-encoder,  $box_t$  and  $box_q$  are padded to the maximum sequence length of 1024. Weights of this encoder are initialized randomly. We denote the bounding box encoding as follows –

$$Q_s = V(pad(Q_s^{inp})) \in \mathcal{R}^{1024 \times 1024}$$
(5)

$$T_s = V(pad(T_s^{inp})) \in \mathcal{R}^{1024 \times 1024} \tag{6}$$

where V is the ViT-like bounding box encoder and  $Q_s, T_s$  are the final feature sets corresponding the query and target respectively.

# **1.2. Feature Fusion**

### 1.2.1 Symmetric Attention Module.

The symmetric attention module consists of 2 multi-head attention (MHA) modules each containing 4 heads and embedding dimension of 512. To ensure that the input token feature dimension matches with MHA's specifications, the input sequences are passed through fully-connected layers to project feature dimension onto dimension of 512. The outputs of the MHA blocks are concatenated (along last dimension) to obtain final token sequence with feature dimension of  $BS \times 1024 \times 1024$ .

### 1.2.2 Co-Attention and Cross-Attention Modules.

Co-Attention Module contains 3 symmetric attention modules one for each modality, outputting sequences VV, TTand SS of length 1024 and token size 1024.

$$VV = SA(Q_v, T_v) \in \mathcal{R}^{1024 \times 1024}$$
(7)

$$TT = SA(Q_t, T_t) \in \mathcal{R}^{1024 \times 1024} \tag{8}$$

$$SS = SA(Q_s, T_s) \in \mathcal{R}^{1024 \times 1024} \tag{9}$$

where SA is the Symmetric Attention operation.

Similarly, the Cross-Attention Module consists of 2 symmetric attention modules for generating spatio-visual features and 2 for attending text over those generated features. It generates  $S_qV_tT_t$  and  $S_tV_qT_q$  the dimensions of which are, once again, length of 1024 and token size of 1024. Finally we concatenate the outputs of Co-Attention and Cross-Attention blocks to create feature volume  $F_{sim}$ . Obtain  $F_{sim}$  as follows –

$$S_q V_t = SA(Q_s, T_v) \in \mathcal{R}^{1024 \times 1024} \tag{10}$$

$$S_q V_t T_t = SA(S_q V_t, T_t) \in \mathcal{R}^{1024 \times 1024}$$
(11)

$$S_t V_q = SA(T_s, Q_v) \in \mathcal{R}^{1024 \times 1024}$$
(12)

$$S_t V_q T_q = SA(S_t V_q, Q_t) \in \mathcal{R}^{1024 \times 1024}$$
(13)

$$F_{sim} = concat(VV, TT, SS, S_qV_tT_t, S_tV_qT_q)$$
(14)

where  $F_{sim} \in \mathcal{R}^{1024 \times 1024}$  is the final set of features and are processed as described in the main paper.

### **1.3. Bounding Box Detection**

The  $F_{sim}$  is passed through a linear layer followed by a sequence of 4 convolutional layers to produce features which are reshaped to give outputs at 4 different levels as described in the main paper. Then we apply a standard FPN [3] to obtain features at a common representation size of 1024. Finally, we generate proposals most similar to the query through an RPN [2] and subsequently detect bounding boxes using RoI Heads. We choose the default parameters for the RPN and RoI heads (from [4]) –

- RPN NMS threshold = 0.7
- RPN IOU threshold = 0.7 (FG), 0.30 (BG)
- RPN Score Threshold = 0
- ROI NMS Threshold = 0.40
- ROI Score Threshold = 0.05
- Detections per image = 200
- ROI IOU threshold = 0.50 (FG), 0.50 (BG)

where FG, BG are the foreground and background respectively. Note that the bounding box detection for LayoutLMv3 baseline is kept exactly the same as the proposed MONOMER whereas for BHRL, the github implementation is used.

### **1.4. Model size comparison vs baselines**

On comparing the model sizes of the selected baselines with our proposed model, we found that BHRL has 48Mparameters but is considerably worse at task performance compared to LayoutLMv3 (126*M*) and MONOMER (146*M*). Further, despite the comparable number of parameters in LayoutLMv3, our method outperforms it significantly (+20% in mAP).

# 2. Human Evaluation

In this section, we delineate the human evaluation conducted on the generated dataset through the proposed technique. A summary of the results have been tabulated in Table 1. We create 4 dataset split containing 40 samples each and share each split with 3 human evaluators to report the metrics. The high recall and precision over all the splits indicates that not only does our method generate high quality ground truths (87.96%) but is also able to find most of the target regions (81.07%) in a given document corresponding to a particular query. This saves a considerable amount of human annotation costs while maintaining reliability. Further, we also note that a substantial number of samples (48.12%) over all splits are complex and hard to search for in a document. While this metric is largely subjective, its

Metrics	Split-1	Split-2	Split-3	Split-4	Average over Splits
Recall	87.25	71.93	80.74	84.38	81.07
Precision	83.06	87.83	91.41	89.58	87.96
F1	84.28	78.56	85.55	86.48	83.71
% Complex	49.99	20.16	80.0	20.0	10 10
Pattern	40.00	39.10	00.0	30.0	40.12
% non exact but similar matches over correct matches highlighted.	79.61	93.07	91.09	86.17	87.48

Table 1: Human Evaluation of the proposed dataset over 4 different splits. The last row indicates the non-trivial nature of dataset generation through the percentage of examples that are not exactly the same as the query.

	AP50	AR50	AP75	AR75	mAP
Heuristic	89.94	41.70	64.81	29.89	44.39
MONOMER	81.59	59.88	73.17	52.78	56.49

Table 2: Performance comparison between data generation heuristic as a baseline and MONOMER on humanannotated data

consistency over multiple splits verifies our claim. Finally, the last row shows that query matching within targets is non-trivial such that only 12.42% cases where snippet and highlighted similar regions are exact matches with the rest of the non-trivial matches containing the same layout but possibly different variation, text, fonts etc which allows the model to learn "advanced one-shot search capabilities".

**Hard samples (question 3 in human evaluation)** The evaluators were asked to decide if a snippet is hard based on whether its structure is complex - a) the snippet comprises of a significant number of elements or that the elements are arranged in a complex layout. Further, they were instructed to judge a snippet as hard b) if they would find it difficult to search a given query snippet in some target document.

# 3. Dataset Generation

Link with real world data We asked the human evaluators to annotate 160 test samples (used in human study) to compare the performance of our data generation heuristic (as baseline) to that of our proposed MONOMER. The results in Table 2 indicate that MONOMER performs better than heuristic and demonstrates its ability to perform well on a real dataset, highlighting the effectiveness of the proposed data generation technique to enable MONOMER to generalize better. It is apparent in comparison with the heuristic-based baseline in Table 2 that training our model on this dataset enables us to obtain a more generalized oneshot detector. We hypothesize that despite our heuristic not finding an exhaustive set of matches (81% recall) because it is more stringent and based on layout-based matching, the data generated by our dataset generation heuristic contains enough accurate samples for the model to learn snippet similarity. We also observe in Table 2 that the average precision (@50) of the heuristic remains high, and recall is slightly lower, verifying our hypothesis. Further, at a higher threshold of 0.75, MONOMER performs better in AP75, AR75, and mAP.

Limitations of dataset generation It is noteworthy to mention that the dataset generation method relies on a heuristic (metric Eq. 1 in main paper) and consequently encounters some failure cases. In this section, we discuss some of these failure cases using qualitative examples. The quantitative efficacy of our method is already elucidated in Table 1. A summary of failure cases is presented in Fig 1-Fig 2. Particularly, in Fig 1 A the crop only contains a single "Yes/No" choice option, however it considers elements in the target with multiple structures within it. This happens as a result of the threshold penalty and a less strict size heuristic. The additional elements are considered as single blocks of text or fillable areas which our metric fails to capture. Further, in Fig 1 B the heuristic is unable to discern the difference between a block of comma separated text and option-like text. This can be attributed to lack of detailed annotations (of low level elements) in the dataset, typically "option-like" text is annotated as a list which wasn't correctly done in this instance. Lastly, in Fig 2 C the heuristic fails to consider the length of the text and ends up matching a large block with a smaller target. This can be regulated using the size penalty. However, we reiterate that these examples occur sporadically and the same is justified through a quantitative analysis in Table 1.

# 4. Additional Qualitative Results

We add more results produced by the proposed MONOMER in this section. Please refer to Fig. 3 to Fig. 7 for the predictions.

# References

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(d) False Positives B

	(7) Deponent represents that he owns real estate at
(5) Dependent hereby requests, and this affidavit and agreement of indemnity is made for the purpose of inducing the Corporation, it rander agents, registrats and trustees, depositaries, redemption, fiscal and paying agent, (1) to refuse to recengize any person other than deponent as the owner of the original and to relate to make any person there is a private truster, experiment, truster, experiment, assumer, and (2) to issue new or duplicate or definitive security or other instrument in substitution for the original, or to make the payment, truster, request and (2) to issue new or duplicate or definitive security or other instrument in substitution for the original, or to make the payment, truster, requestitation, delivery or exchange called for by the original without the surrender thereof for cancellation. Deponent furthermore requests are used to be compared on the original and to relate. The original and to relate the approach, the compared of the comparison and others.	
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(b) False Positives C



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7 State income t	ax.	17 State income tax	17 State income tax	17 State income tax
		Locality Correct	on Information	
Previou	isly reported	Correct information	Previously reported	Correct information
8 Local wages, ti	ps, etc.	18 Local wages, tips, etc.	18 Local wages tips, etc.	18 Local wages, tips, etc.
9 Local income t	ax	19 Local income tax	19 Local income tax	19 Local income tax
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(a) Pred A

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Employment Practices Liability		Emp	loyment Practices Liability	
t is agreed that solely with respect to the Liability Coverage shown above:		It is a	agreed that solely with respect to the Liability Coverage shown above:	
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<ol> <li>The first paragraph of Section II. DEFINITIONS. L. "Loss" is amende "Insured Person".</li> </ol>	d by deleting "Insured" and replacing it with	3.	The first paragraph of Section II. DEFINITIONS. L. "Loss" is amended by deleting "Insured" a "Insured Person".	nd replacing it with
4. Section II. DEFINITIONS. T. "Third Party Claim" is amended by de the brandit of any natural person of partners and standard for a Third P does not include any labor carrierance adhinitiant or other proceeding type of criminal proceeding" and replacing it with "against an Insured matural person other than a Claimant for a Thard <b>Tary Worngillo</b> any labor or grevance arbitration or other proceeding pursuant to a col proceeding".	leting "against an Insured by or on behalf of or for ty Wrongful Act, provided, that Third Party Claim pursuant to a collective benganing agreement or any Person by or on behalf of or for the benefit of any provided, that Third Party Claim does not include lective barguining agreement or any type of criminal	4.	Section II. DEFINITIONS. T. "Third Party Chaim" is amended by deleting "against an Insured the benefit of any natural person other than a Chainman for a Third Party Wronglu Act, provi- des not include any labor or generative arbitration or other proceeding presents to a collective by type of eminand proceeding and replacing it with "against an Insured Person by or or behalf of matrial person oble than a Chaimann (or a Third Party Wrongli Act, provide), that Third Pa- ary labor or grievance arbitration or other proceeding pursuant to a collective benginning agreem proceeding."	I by or on behalf of or ded, that <b>Third Party</b> argaining agreement or f or for the benefit of a <b>rty Claim</b> does not in ent or any type of crim
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<ol> <li>Section IV. CONDITIONS A. is amended by deleting "Insured" when Person".</li> </ol>	ever it appears and replacing it with "Insured	6.	Section IV. CONDITIONS A. is amended by deleting "Insured" wherever it appears and replaci Person".	ing it with "Insured
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Nothing herein contained shall be held to vary, alter, waive or extend any of above-mentioned policy, except as expressly stated herein. This endorsement is	the terms, conditions, exclusions or limitations of the part of such policy and incorporated therein.	Noth	ing herein contained shall be held to vary, alter, waive or extend any of the terms, conditions, exe ementioned policy, except as expressly stated herein. This endorsement is part of such policy and in	clusions or limitations acorporated therein.
EPL-7058 Ed. 08-07	Page 1 of 2	EPL-	7058 Ed. 08-07	Page 1 of 2
(c) Pred B			(d) Target B	



(b) Target A

# Figure 3: Flamingo Forms Examples (1)

W	as the organization a U.S. transferor of property to a foreign corporation during the tax year? If "Yes." the		
0	qanization may be required to file Form 926, Return by a U.S. Transferor of Property to a Foreign Corporation (see		
In	structions for Form 926)	Tes Yes	No.
-			
D	id the organization have an interest in a foreign trust during the tax year? If "Yes," the organization may be		
16	quired to separately file Form 3520, Annual Return To Report Transactions With Foreign Trusts and Receipt of		
G	ertain Foreign Gifts, and/or Form 3520-A, Annual Information Return of Foreign Trust With a U.S. Owner (see		
In	structions for Forms 3520 and 3520-A; do not file with Form 990)	T Yes	No.
P	it the organization have an ownership interest in a foreign corporation during the tax years in res, the		
0	ganization may be required to file Form 5471, Information Return of U.S. Persons With Respect To Certain Foreign		
6	orporations (see Instructions for Form 5471)	Vor	
W	as the organization a direct or indirect shareholder of a passive foreign investment company or a qualified		
	ection fund during the tay year? If "Yes" the granization may be required to file Form \$521. Information Beturn		
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Did the organization have an interest in a foreign trust during the tax year? If 'Yes," the organization may be		-
required to separately file Form 3520, Annual Return To Report Transactions With Foreign Trusts and Receipt of		
Certain Foreign Gifts, and/or Form 3520-A, Annual Information Return of Foreign Trust With a U.S. Owner (see		
Instructions for Forms 3520 and 3520-A; do not file with Form 990)	Yes	No
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Corporations (see Instructions for Form 5471)	Vor	
Was the organization a direct or indirect shareholder of a passive foreign investment company or a qualified		
electing fund during the tax year? If "Yes," the organization may be required to file Form 8621, Information Return		
by a Shareholder of a Passive Foreign Investment Company or Qualified Electing Fund (see Instructions for Form		
8621)	Yes	No.
Did the organization have an ownership interest in a foreign partnership during the tax year? If "Yec," the		
organization may be required to file Form 8865, Return of U.S. Persons With Respect to Certain Foreign Partnerships		
(see Instructions for Form 8865)	Yes	
Did the organization have any operations in or related to any boycotting countries during the tax year? If "Yes,"		
the organization may be required to separately file Form 5713, International Boycott Report (see Instructions for		
Form 5713: do not file with Form 990)	V	1 Ma

# (a) Pred C



# (b) Target C

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	Caution: If you	checked the "No" box, you cannot take a credit for qualified fuel cell property. Skip lines			
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2	Credit carryforw	vard from 2014. Enter the amount, if any, from your 2014 Form 5695, line 16	12		
3	Add lines 6, 11,	and 12	13		
4	Limitation base	d on tax liability. Enter the amount from the Residential Energy Efficient Property Credit			
-	Limit workshee	t (see instructions)	14		
2	Residential en	ergy efficient property creait. Enter the smaller of line 15 or line 14. Also include this in 1040 line 53: or Form 1040NR line 50.	1.		
6	Credit carryfon	ward to 2016. If line 15 is less than line 13, subtract line 15	15		
-	from line 13	16			
Pane	arwork Reduction	n Art Notice, see your tay return instructions		For	m 569
		A di rite La Phil			

(c) Pred D

# (d) Target D

Figure 4: Flamingo Forms Examples (2)



### (a) Pred E

Indian acunail of	headquater@iemr	ICMP D 0 4014	Technical and
Indian council of	neadquater@icmr.org.i	ICMR, P.O-4911	recritical and
Medical Research	n	Ansari nagar, New	financial support
(ICMR)		Delhi-110029	for research
			activities
Department of	Webmanager.dbt@nic.i	Department of	Funding &
Biotechnology (DBT)	n	Biotechnology, 6 <sup>th</sup> -	technical support
		8 <sup>th</sup> Floor, Block-	for research
		2CGO complex,	activity
		Lodhi Road, New	
		Delhi-1100003	
Council of Scientific &	dgcsir@csir.res.in	Council of Scientific	Scientific
Industrial Research		and Industrial	research activities
(CSIR)		research,	
		AnusandhanBhava	
		n, 2 Rafi marg, New	
		Delhi-110001	
Department of	dstinfo@nic.in	Department of	Supporting
Science &		Science &	scientific
Technology (DST)		Technology,	research,
		Technology	financial support
		Bhavan, New	
		Mehrauli Road,	
		New Delhi- 110016	

# (b) Target E

Indian council of	headquater@icmr.org.i	ICMR, P.O-4911	Technical and
Medical Research	n	Ansari nagar, New	financial support
(ICMR)		Delhi-110029	for research
			activities
Department of	Webmanager.dbt@nic.i	Department of	Funding &
Biotechnology (DBT)	n	Biotechnology, 6 <sup>th</sup> -	technical support
		8 <sup>th</sup> Floor, Block-	for research
		2CGO complex,	activity
		Lodhi Road, New	
		Delhi-1100003	
Council of Scientific &	dgcsir@csir.res.in	Council of Scientific	Scientific
Industrial Research		and Industrial	research activities
(CSIR)		research,	
		AnusandhanBhava	
		n, 2 Rafi marg, New	
		Delhi-110001	
Department of	dstinfo@nic.in	Department of	Supporting
Science &		Science &	scientific
Technology (DST)		Technology,	research,
		Technology	financial support
		Bhavan, New	
		Mehrauli Road,	
		New Delhi- 110016	

(c) Pred F

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(d) Target F

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before the introduction of the strategies of the strategies of the introduction of the strategies of

METHODS ARTICLE

at 10 July 2014

### (b) Target G

### fromtions in NEUROINFORMATICS

A flexible, interactive software tool for fitting the parameters of neuronal models

éter Friedrich 12, Michael Vella<sup>3</sup>, Attila I, Gulvás<sup>1</sup>, Tamás F. Freund 12 and Szabolcs Káli 1

s, Jalici muses ... IARA, Germany Geit, EFFL, Switzerland

The construction of biologically relevant neuronal models as well as media-based are in experimental takes online regions the immunationate first of models of models on conservation to the state behavior of the model in a certain paradigm matches is aclosely as possible operagencing output of a real neuron according to some predefined ontexion. Althe the task of model optimization is often computationally hard, and the quality of the real expends havely on technical issues such as the appropriate choice and implements of cost functions and optimization algorithms, no existing program provides access the baset available methods while algorithms, no existing program and custor the optimization of neuronal models, and allo beaures a graphical interfaces advantas is easy for even non-expect users to handle many commoly occurring some Meanwhile, educated users can extend the capabilities of the program and custor supported through an external interface. We have histed the program can custor supported travels than elitations. We have histed the program can custor supported travels than elitations. We have histed the program can custor supported travels than elitations. We have histed the program can custor supported travels than elitations than the state of the program and custor supported travels than elitations. We have that the program can custor and we used simulations to an the state of the program elitations expense instructions in compartment many can be assisted parameters and elitations equally dot to use the simulation compare to determine parality earning the advantace endormal data. We subsidiate expense instructions endormed by the section real and custor advantace endormales and endormal readers and the advantace equality optimizers to determine parality earning advantace endormales protections and the advantace endormales and the reader of models. The simulation advantace endormales protections cannot and the linterg to barbates advantace endormales protections candots and e The construction of biologically relevant neuronal models as well as model-ba

Frontiers in Neuroinformatics

VIRDUCTION arrendly available experimental data male it possible to creat transmity complex multi-comparimental conductance-based in the optimal parameter values is highly non-trivia, and has been the abapter of exercise (Valuer and Bower, 1999; the optimal parameter values is highly non-trivia, and has been the abapter of exercise (Valuer and Bower, 1994), because (al., 2005; Hey et al., 2011). However, there is no strictly raised and the optimal neurons. These is to sample transmitters, which are offen poorly (et al., 1005; Jaune and Jaunes) multiple (eg., 1994). There are also struckly raised to the busier off the model is comparison, and is provide a variety of ender the struckly that the busiers off the model and there and a local 2012. Seven and 2009; Rosant et al., 2001; Contract and and the optimal the busier difficus pools and on the product and the struct and has not diversely raised to the product contract, and the and the comparison of the structure and and 2009; Rosant et al., 2001; Contract and and 2009; Rosant et al., 2001; Contract and and 2009; Rosant et al., 2001; Contract and and structure and the optimal contract and and the optimal production of the rail access. The relation and 2009; Rosant et al., 2001; Annot et al., 2001; Contract and and 2009; Rosant et al., 2001; Annot and and the optimal production of the rail merenting exception, see Flays et al., 1009; Annot ender and the optimal parameter and th

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(c) Pred H

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# (d) Target H

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Figure 6: PubLayNet Examples (1)

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### (a) Pred G

# METHODS ARTICLE published: 10 July 2014 doi: 10.3388/frint2014.00083 NEUROINFORMATICS A flexible, interactive software tool for fitting the parameters of neuronal models er Friedrich 12, Michael Vella<sup>2</sup>, Attila I, Gulvás<sup>1</sup>, Tamás F. Freund 12 and Szabolcs Káli 12\* bral Cortex Research, Institute of Experimental Medicine, Hungarian Academy of Sci fon Behnology, Péter Pizmány Catholic University, Budapast, Hungary sialogy, Davelopment and Neuroscience, University of Cambridge, Cambridge, UK ter and Neuroscoke, tavenety of Clentings, Caretage, 14 The construction of biologically relevant neuronal models as well as model-based analysis of experimental tak onter nequires the simultaneous fitting of multiple model parameters, so that the behavior of the noted in a certain paradigm matches las closely as possibilit degrands havely on technical issues such as the appropriate choice and implementation degrands havely on technical issues such as the appropriate choice and implementation of cost functions and optimization anglorithms, no existing orginar movies access to the best available methods while aliae guiding the user through the process effectively. Usu software, called Optimizing, implements a modular and extensible framework for the optimization of neuronal models, and aliao features a graphical interface which haves in a sing or winn non-expect users to harvie many commonly occurring scenarios. Mearwhile, educated users can actend the capabilities of the program and variang scenarios. Mearwhile, educated users can extend the theory of the program and variant distribution interfaces directly with the NUERON simulator to run the models. Other simulators are used of problems of varing complexity, using different model classes. As targets, we used simulation karses from the same or a more complex model classes. As targets, we used simulations in models to complex biological data. Cur detailed companions show that Ophimes can handre avel range of problems in detailed companions how that Ophimes can handre avel range of problems, and delives equipading the show that Ophimes can handre avel range of problems in detailed companions how that Ophimes can handre avel range of problems in detailed companions how that Ophimes can handre avel range of problems in detailed companions how that Ophimes can handre avel range of problems in detailed companions and how that Ophimes can handre avel range of problems in detailed complexitions patholaus in the detailed companions (how the exis . Germany EEFL Switzerland

Frontiers in Neuroinformatics

DOUCTION and wantable reperimental data make it possible to cardinate statistical parameter values is highly non-tericity, and has singly complex multi-competencemic conductance-based ing the optical parameter values (it highly non-tericity, and has the ubject of extrational conductance based is present at al., 2007, 100; 11(a) error at al., 2007, 2003; 11(a) error at al., 2007, 2003; 11(a) error at al., 2007, 2003; 11(a) error at al., 2003; 11(b) error at al., 2003; 10(b) error at al., 2003; 10(c) error at al., 2003; 2004; 200

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Makin Sounds APR Conduct Di Alemida M

Examiner calibration Three examiners were properly calibrated prior to clinical examination. The calibration process included the examination or clouison in 24 chil-dren, performed twice with a 15-day interval in between. Data were subjected to Kappa statistics (K) for analysis of reproducibility. An index great-er than 0.81 K and Pearon correlation coefficient (Ka 5 200) were calculated. Results revealed excel-lent inter and inter-examiner childhily. lent intra and inter-examiner reliability.

All chiral environment were performed in chool environment with the children sitting co ortably and facing abundant source of artifi-ight. First, they were asked to perform maxim mouth opening and then occlude in maximum ercuspation (MHH) for data collection. To assess transverse posterior relationship betw

To assess transverse posterior relationship betw er and lower dental arches, the following crit e applied: Absent posterior crossbite (when tal cusps of upper posterior teeth occluded in we of mandibular posterior teeth), and prese posterior crossbite (when the buccal cusps of u posterior teeth occluded in the central sulcus wer teeth, thereby establishing a transverse or rted cross relationship on the back). Subsequent th unilateral crossbites, whether with shift or tru-outly a bitmer large sequence included.

Justitionnaire A questionnaire<sup>10</sup> comprising standardized ques-ons about patient's history was answered by par-nors about patient's history was answered by par-ticipation and the parafunctional hashi (daylow men, night time or both), and the variables ridtar-tic hild presented reduced step (see room ) as well-eachabets (see or no) were investigated. It is wort excludes (see or no) were investigated. It is wort aminiming that the examinent dia not interfer hild the questionnaires were being filled our. crossitie) and "Present" (when the child presented any type of posterior crossitie). According to Table 2, the prevalence of buys-tim was higher for males (30 %%) in comparison to females (27%). Likewise, black-skin children had higher prevalence (36.1%) when compared to oth-er races. Among children with no posterior crossitie,

Data analysis First, a descriptive statistical analysis of all vari-ables (age, sex, race, posterior crossibite, bruxism, headache and restless sleep) was carried out. Sub-sequently, analyses of statistical significance were

Dential Press J Orthool 2014 Sept-Oct;1

conducted by means of chi-square test in order to investigate possible associations between bruxism and other characteristics (see, nece, posterior cross-bite, headche and resdess skep). The same test in-vestigated a potential association between posterior crossibie, headche and resdess velocy. The same test in-gistic regression model was applied for the presence of the same means the same of the base of the base of the formation of the base o

of bruxism, thus presenting the Odds Ratio (OR). The level of significance was set at 5%, i.e., test re-

sults were not statistically significant when P-value was less than or equal to 0.05.

RESULTS Descriptive analysis of variables in the sample Sample distribution according to age was pre-dominantly exampsed of childran between A and 5 years old (37.3% and 38.7%, respectively). Regarding patients' sex, the sample was very vold divided and comprised 434 females (49.7%) and 439 males (50.3%). As for race, most children bud brown skin (pardo) (58%), whereas only 0.4% had yellow kin.

ninority showed posterior crosship ing 15.5% (n = 135) as distributed in Table 1. A for the prevalence of the parafunctional habit of b  $\mu x$ -ism, 26.5% of children had the habit at night, 2.2% during the day and 0.1% during the night and our-

during the day and 0.1% during the night and our-ing the day, thereby representing a total of 28.8% of children with bruxism. Our of the total sample, 21.8% (n = 100) reported having headaches wale 36.1% (n = 315) claimed to have restless sleep.

Association between bruxism and other variables To asses a potential association between the pres-ence of bruxism and other variables, the sample was divided as follows: "No" (when the child did not have bruxism) and "Yes" (when children showed signs of bruxism at night and/or day). The variable poterior crossible was also treated in a similar way:

"Absent" (when the child did not have posterior crossbite) and "Present" (when the child presented

RESULTS

vellow skin

### (a) Pred I

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### International Journal of Breast Cancer

	TABLE 6: Factors affect	ing the tumor response.		
Characteristic	Tumor partial response (pPR)	Tumor complete response (pCR)	P	OR (95% CI)
Age				
Up to 59	27 (73%)	10 (27%)	0.553	0.60.00 [1.4= 2.26]
60 and above	9 (81.8%)	2 (18.2%)	0.552	0.60 (0.11 to 5.26)
Family history				
Yes	5 (62.5%)	3 (37.5%)	0.271	0.48.40.004-0.40
No	31 (77.5%)	9 (22.5%)	0.371	0.48 (0.09 to 2.42)
Specimen size				
Up to 5 cm	26 (70.3%)	11 (29.7%)	0.165	0.22 (0.02 as 2.07)
More than 5 cm	10 (90.9%)	1 (9.1%)	0.105	0.45 (0.04 10 4.07)
FNA grade				
Grade 1	14 (66.7%)	7 (33.3%)	0.040	0.45.69.19.1.1.70
Grade 2	22 (81.5%)	5 (18.5%)	0.240	0.45 (0.12 to 1.71)
DCIS				
Yes	11 (84.6%)	2 (15.4%)	0.248	2 20 (0 41 - 11 22)
No	25 (71.4%)	10 (28.6%)	0.348	2.20 (0.41 to 11.75)
Type of cancer				
pCR	1 (11.1%)	8 (88.9%)		
Invasive ductal carcinoma NOS	35 (92.1%)	3 (29%)	<0.001*	-
Invasive lobular carcinoma	0	1 (100%)		
Lymphovascular invasion				
Yes	13 (100%)	0		
No	23 (65.7%)	12 (34.3%)	a dus-	
Statistically significant.				
	TABLE 7: Factors affectin	ng lymph node response.		
Characteristic	TABLE 7: Factors affectin Lymph node partial response	1g lymph nøde response. Lymph nøde complete response	ŕ	OR (95% CI)
Characteristic Age	TABLE 7: Factors affectin Lymph node partial response	ag lymph node response. Lymph node complete response	P	OR (95% CI)
Characteristic Age Up to 59	TABLE 7: Factors affecti Lymph node partial response 22 (59.5%)	sg lymph node response. Lymph node complete response 15 (40.5%)	<i>P</i> 0.804	OR (95% CI) 0.83 (0.20 to 3.37)
Characteristic Age Up to 59 60 and above	TABLE 7: Factors affectin Lymph node partial response 22 (59.5%) 7 (63.6%)	ng lymph node response. Lymph node complete response 15 (40.5%) 4 (36.4%)	P 0.804	OR (95% CI) 0.83 (0.20 to 3.37)
Characteristic Age Up to 59 60 and above Family history	TABLE 7: Factors affectin Lymph node partial response 22 (59.5%) 7 (63.6%)	1g lymph node response. Lymph node complete response 15 (40.5%) 4 (36.4%)	P 0.804	OR (95% CI) 0.83 (0.20 to 3.37)
Characheristic Age Up to 59 60 and above Family history Yes	TABLE 7: Factors affectin Lymph node partial response 22 (59.5%) 7 (63.6%) 6 (75%)	ig lymph node response. Iymph node complete response 15 (40.5%) 4 (38.4%) 2 (25%)	P 0.804 0.356	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36)
Characteristic Age Up to 59 60 and above Family history Yes No	TABLE 7: Factors affectin Lymph node partial response 22 (59.5%) 7 (63.6%) 6 (75%) 23 (57.5%)	sg lymph node response. Lymph node complete response 15 (40.5%) 4 (36.4%) 2 (25%) 17 (42.5%)	p 0.804 0.356	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36)
Characteristic Age Up to 59 60 and above Family history Yes No Specimen size	TABLE 7: Factors affectis Lymph node partial response 22 (59.5%) 7 (63.6%) 6 (75%) 23 (57.5%)	ig lymph nøde response. Lymph nøde complete response 15 (40.5%) 4 (36.4%) 2 (25%) 17 (42.5%)	P 0.804 0.356	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36)
Characteristic Äge Up to 59 60 and above Family Jakory Yes No Specimen size Up to 5 cm	TABLE 7: Factors affecti Lymph node partial response 22 (59.5%) 7 (63.8%) 7 (63.8%) 23 (57.5%) 22 (59.5%)	ng lymph node response. Lymph node complete response 15 (40.5%) 4 (36.4%) 2 (25%) 17 (42.5%) 15 (40.5%)	P 0.804 0.356 0.804	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37)
Characteristic Age Up to 59 60 and above Fomily bistory Yes No Specimen size Up to 5 cm More than 5 cm	TABLE 7: Factors affecti Lymph node partial response 22 (59.5%) 7 (63.6%) 6 (75%) 23 (57.5%) 2 (59.5%) 7 (63.6%)	ig lymph node response. Iymph node complete response 15 (40.5%) 4 (56.4%) 2 (25%) 17 (42.5%) 15 (40.5%) 4 (56.4%)	P 0.804 0.356 0.804	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37)
Characteristic Age Up to 59 60 and above Family history Yes No Specimen size Up to 5 cm More than 5 cm FNA grade	Tanta 7, Factors affectin Lymph node partial response 22 (59.5%) 7 (63.6%) 6 (75%) 23 (52.5%) 22 (59.5%) 7 (63.6%)	ng lymph node response. Lymph node complete response 15 (40.5%) 4 (36.4%) 17 (42.5%) 15 (40.5%) 4 (36.4%)	P 0.804 0.356 0.804	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37)
Characteristic Age Up to 59 60 and above formuly history Yes No Up to 5 cm Up to 5 cm Wate than 5 cm FNA grade Cond-1	Tanta 7, Factors affectin Lymph mode partial response 22 (59.5%) 7 (65.6%) 22 (55.5%) 22 (55.5%) 7 (66.6%) 0 (10.4%)	ng lymph node response. Lymph node complete response 15 (40.5%) 2 (25%) 17 (42.5%) 15 (40.5%) 4 (54.4%) 16 (47.6%)	P 0.804 0.356 0.804	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 0.83 (0.20 to 3.37)
Characteristic Age 00 pto 59 60 and above Family history Yes No Specienen size Up to 5 cm Mere than 5 cm PMA grade Code4 Code4	TABLE 7: Factors affectin Lymph node partial response 22 (59.5%) 7 (63.6%) 24 (575%) 22 (59.5%) 7 (63.6%) 10 (57.6%) 11 (57.6%) 18 (66.7%)	ng Jmph node response. Lymph node complete response 15 (40.5%) 4 (36.4%) 17 (42.5%) 15 (40.5%) 4 (36.4%) 36 (47.5%) 50 (47.5%) 50 (47.5%)	p 0.804 0.356 0.804 0.315	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 0.55 (0.17 to 127)
Characteristic Age (b) to 59 (60 and 3000) Bonny Jhanoy (2000) No No No Porcionen aine Up to 5 cm. Moner dana 5 cm. PNA grade Could 3 Grade 2 DCIS	Tanta 7, Factors affectin Lymph mode partial response 22 (59.5%) 7 (65.6%) 23 (55.5%) 23 (55.5%) 7 (66.6%) 10 (52.5%) 11 (52.5%) 12 (52.5%) 13 (66.7%)	ng lymph node response. I ymph soale complete response 15 (40.5%) 4 (56.4%) 7 (7425%) 15 (40.5%) 16 (40.5%) 16 (40.5%) 16 (40.5%) 16 (40.5%)	P 0.804 0.356 0.804 0.315	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 0.35 (0.17 to 1.27)
Characteristic Cytor 59 (Cytor 59 60 and above Panuly Hatory Yes No No Source Caracteristic Cytor Source Source Caracteristic Cytor Source Source Caracteristic Conder Con	TABLE 7: Factors affectin Lymph node partial response 22 (56.5%) 7 (61.6%) 22 (555%) 22 (555%) 7 (61.6%) 12 (575%) 23 (555%) 7 (61.6%) 13 (67.5%) 8 (61.5%)	ng lymph mode response. Tymph mode complete response 15 (40.5%) 4 (56.4%) 17 (42.5%) 15 (40.5%) 4 (56.4%) 10 (45.4%) 10 (45.4%) 10 (45.4%) 10 (45.5%) 2 (30.5%)	P 0.804 0.356 0.804 0.315 0.923	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 6.35 (0.17 to 127) 1.66 (0.28 to 3.93)
Characteristic Age (0) pas 50 (60 and above Two Ward and the second second to the second second second to the second second second to the second second second second to the second second second second to the second second second second second to the second second second second second to the second second second second second second second to the second second second second second second second to the second second second second second second second second second to the second seco	Tasta 7: Factors affectin Lymph node partial response 22 (59.5%) 7 (63.6%) 6 (75%) 22 (59.5%) 7 (64.6%) 14 (54.6%) 18 (66.7%) 8 (64.5%) 21 ((0%))	ng lymph noder response. I ymph snode complete response 15 (40.5%) 4 (36.4%) 17 (42.5%) 16 (40.5%) 16 (40.5%) 16 (40.5%) 16 (40.5%) 16 (40.5%) 16 (40%)	p 0.804 0.356 0.804 0.315 0.923	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 0.55 (0.17 to 127) 1.06 (0.28 to 3.33)
Characteristic Characteristic Characteristic Characteristic Characteristic Characteristic Son Characteristic Versen Nober Son Son Nober Son Characteristic Characteristic Son Nober Son Nober Son No	Tasta 7: Factors affectin Lymph mode partial response 22 (59.5%) 7 (66.9%) 23 (57.5%) 22 (59.5%) 77 (66.4%) 14 (57.5%) 22 (59.5%) 72 (66.9%) 16 (67.5%) 18 (66.5%) 21 (60%)	ng lymph nade response. <u>Tymph vade complete response</u> 14 (40.7%) 4 (56.4%) 17 (42.5%) 16 (40.5%) 4 (54.4%) 10 (42.5%) 5 (33.3%) 14 (40%)	<i>p</i> 0.804 0.356 0.804 0.315 0.923	OR (95% CJ) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 6.35 (0.17 to 177) 1.06 (0.28 to 3.93)
Characteristic Age (Dp to 50 60 and above final above final above the state of the state (Dp to 5 cm) Mare than 5 cm (PA grade Cracke 1 Cracke 2 Cracke 2 No No Dppe of cncer pCR	Tasta 7: Factors affection Lymph node partial response 22 (58.5%) 7 (63.6%) 22 (55.5%) 7 (63.6%) 22 (55.5%) 7 (63.6%) 18 (66.7%) 8 (66.7%) 23 (65.5%) 12 (22.2%)	ng lymph nader response. I ymph snade completer response 15 (40.5%) 4 (36.4%) 17 (42.5%) 18 (40.5%) 16 (40.5%) 19 (32.5%) 19 (32.5%) 15 (32.5%) 15 (32.5%) 16 (40%) 2 (72.5%)	P 0.804 0.356 0.804 0.315 0.923	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 0.35 (0.17 to 177) 1.06 (0.28 to 3.93)
Characteristic Age to 59 40 and above For the second second For the second second For the second second PAC grade Contact Contact PAC grade Contact PAC grad	Tasta 7: Factors affectin Lymph node partial response 22 (59.5%) 7 (60.9%) 23 (57.5%) 23 (57.5%) 23 (57.5%) 23 (57.5%) 24 (57.5%) 24 (66.7%) 81 (66.7%) 81 (66.7%) 21 (1078)	ng lymph mode renyome. 1 ymph mode complete response 15 (40.5%) 4 (36.4%) 17 (42.5%) 18 (40.5%) 16 (40.5%) 16 (40.5%) 16 (40%) 7 (77.5%) 11 ((2.9%)	P 0.804 0.356 0.804 0.335 0.923 0.923	OR (95% C1) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 6.55 (0.17 to 177) 1.06 (0.28 to 3.93) 
Charas scrinis: Charas scrinis: Up to 59 40 and above Really Phatory Yes No Yes No Contain C	Tasta 7: Factors affectin Lymph node partial response 22 (59.5%) 24 (57.5%) 24 (57.5%) 7 (61.6%) 14 (20.4%) 18 (66.5%) 21 (65%) 21 (65%) 21 (65%) 22 (71.3%) 0	ng hymph mode response. I ymph mode complete response 15 (40.5%) 4 (36.4%) 17 (42.5%) 17 (42.5%) 16 (46.4%) 16 (46.4%) 16 (46.4%) 16 (46.4%) 16 (46.4%) 16 (46.4%) 11 (26.9%) 11 (26.9%) 11 (26.9%)	<i>p</i> 0.804 0.356 0.804 0.335 0.923 0.012"	OR (95% CI) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 0.35 (0.17 to 177) 1.06 (0.28 to 3.93) —
Characteristic Age (b) Go and above for found above Non- Yes No Percenteristic VD to 5 cm Moner than 5 cm PAA grade Crade 2 CCIS Const	Tasta 7: Factors affectin Lymph node partial response 22 (59.5%) 7: (65.9%) 23 (52.5%) 23 (52.5%) 23 (52.5%) 7: (64.9%) 14 (65.4%) 15 (66.7%) 16 (66.7%) 12 (22.9%) 27 (71.9%) 0	ng lymph mode renyome. I ymph mode complete response 15 (40.3%) 4 (36.4%) 7 (42.5%) 15 (40.5%) 16 (40%) 5 (33.5%) 4 (34.4%) 5 (33.5%) 16 (40%) 7 (72%) 11 (10.9%) 1 (10.9%)	P 0.804 0.356 0.804 0.315 0.923 0.923	OR (05% C1) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 6.55 (0.17 to 177) 1.06 (0.28 to 3.93) —
Thates brinds: The set of the se	Tasta 7: Factors affectin Lymph node partial response 22 (55.5%) 7 (66.6%) 24 (57.5%) 22 (55.5%) 7 (66.6%) 14 (57.5%) 14 (57.5%) 14 (66.5%) 14 (66.5%) 21 (10%) 22 (73.1%) 0 13 (00%)	ng lymph mode response. <u>Tymph mode complete response</u> 15 (40.5%) 4 (56.4%) 17 (42.5%) 16 (40.5%) 16 (40.5%) 16 (40.5%) 16 (40%) 7 (7.5%) 11 (20.5%) 11 (20.5%) 12 (20.5%) 13 (20.5%) 14 (20.5%) 14 (20.5%) 15 (20.5%) 15 (20.5%) 16 (20.5%) 16 (20.5%) 16 (20.5%) 17 (20.5%) 17 (20.5%) 16 (20.5%) 16 (20.5%) 17 (20.5%) 17 (20.5%) 16 (20.5%) 16 (20.5%) 16 (20.5%) 17 (20.5%) 17 (20.5%) 16 (20.5%) 16 (20.5%) 17 (20.5%) 17 (20.5%) 16 (20.5%) 17 (20.5%) 17 (20.5%) 17 (20.5%) 18	P 0.804 0.356 0.804 0.315 0.923 0.012"	OR (95% C1) 0.83 (0.20 to 3.37) 2.21 (0.39 to 12.36) 0.83 (0.20 to 3.37) 6.35 (0.17 to 1.37) 1.06 (0.28 to 3.93) 

exampler calibration Three examines were properly calibrated prior to clinical examination. The calibration process included the examination of orchoise in 24 chil-dren, performed twice with a 15-day interval in exoverse. Data were subjected to Kappa statistic (K) for analysis of reproducibility. An index great-r than 0.81 K and Parano correlation coefficient R.9 0.090 verse calculated. Results revealed exact-ent interval intervaninger reliability. ent intra and inter-examiner reliability.

Clical examination All clinical examinations were performed in the thoole environment with the children sitting com-fugation of the strength of the strength of the the strength of the per and lower dental andre, the following criteria per and lower dental andre, the following criteria per applicit: Absent postretior tended to the strength of postretior crossites (when the buckled in the protories reconsistive (when the buckled of the per postretion tensistive (when the buckled of the per postretion tensistive (when the buckled on the vert tend, thereby establishing at transverse on in-both militarial consistive, whether buckled in the vert tend, thereby establishing at transverse on in-dom militarial consistive, whether buckled in the strength of the strengt

Justitionnaire A questionnaire<sup>10</sup> comprising standardized ques-tions about patient's history was answered by par-nnsiguradmas.<sup>10</sup> Bised on the questionnaire, the resence of brussair (yos or on), the period in which the chial presented the parafunctional habit (day-ning, night time or both), and the variable related to the presence of retures large (yes or no) as well as eachadre (yes or no) were invertigated. It is worth mentioning that the examiner, thid not interfer likel the mentioning increase basing filled ond while the qu estionnaires were being filled out.

### Data ana

### (b) Target I

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	TABLE OF THE OUT MILLER	ing the tunior response.		
Characteristic	Tumor partial response (pPR)	Tumor complete response (pCR)	P	OR (95% CI)
Age				
Up to 59	27 (73%)	10 (27%)	0.553	0.60.00 11 4= 2.263
60 and above	9 (81.8%)	2 (18.2%)	0.332	0.00 (0.11 10 5.28)
Family history				
Yes	5 (62.5%)	3 (37.5%)	0.071	0.48.40.004-0.40
No	31 (77.5%)	9 (22.5%)	0.371	0.48 (0.09 to 2.42
Specimen size				
Up to 5 cm	26 (70.3%)	11 (29.7%)	0.165	0.22/0.024+.2.07
More than 5 cm	10 (90.9%)	1 (9.1%)	0.105	0.45 (0.02 10 4.07)
FNA grade				
Grade 1	14 (66.7%)	7 (33.3%)	0.240	0.45 (0.12 + 1.71)
Grade 2	22 (81.5%)	5 (18.5%)	0.240	0.43 (0.12 10 1.71)
DCIS				
Yes	11 (84.6%)	2 (15.4%)	0.240	3 30 (0 41 - 11 75
No	25 (71.4%)	10 (28.6%)	0.548	2.20 (0.41 to 11.75)
Type of cancer				
pCR	1 (11.1%)	8 (88.9%)		
Invasive ductal carcinoma NOS	35 (92.1%)	3 (7.9%)	<0.001*	_
Invasive lobular carcinoma	0	1 (100%)		
Lymphovascular invasion				
Yes	13 (100%)	0	o part	
No	23 (65.7%)	12 (34,3%)	0.015	_

Characteristic	Lymph node partial response	Lymph node complete response	P	OR (95% CI)
Age				
Up to 59	22 (59.5%)	15 (40.5%)	0.804	0.83 (0.20 to 3.37)
60 and above	7 (63.6%)	4 (36.4%)		
Family history				
Yes	6 (75%)	2 (25%)	0.356	2.21 (0.39 to 12.36)
No	23 (57.5%)	17 (42.5%)		
Specimen size				
Up to 5 cm	22 (59.5%)	15 (40.5%)	0.804	0.83 (0.20 to 3.37)
More than 5 cm	7 (63.6%)	4 (36.4%)		
FNA grade				
Grade 1	11 (52.4%)	10 (47.6%)	0.315	0.55 (0.17 to 1.77)
Grade 2	18 (66.7%)	9 (33.3%)		
DCIS				
Yes	8 (61.5%)	5 (38.5%)	0.923	1.06 (0.28 to 3.93)
No	21 (60%)	14 (40%)		
Type of cancer				
pCR	2 (22.2%)	7 (77.8%)	0.012''	-
Invasive ductal carcinoma NOS	27 (71.1%)	11 (28.9%)		
Invasive lobular carcinoma	D	1 (100%)		
Lymphovascular invasion				
Yes	13 (100%)	0	0.001"	-
No	16 (45.7%)	19 (54.3%)		

### (c) Pred J

### (d) Target J

### Figure 7: PubLayNet Examples (2)

conducted by means of chi-square test in order to investigate possible associations between bruxism and other characteristics (see, nece, posterior cross-bite, headche and resdess skep). The same test in-vestigated a potential association between posterior crossible, headche and resdess skep). The same test in-gistic regression model was applied for the presence of bruxism, thus presenting the Ookl Ratio (Ok). The level of significance was set at 5%, i.e., test re-solw were not artistically similarity the same test of the s sults were not statistically significant when P-value was less than or equal to 0.05.

# RESULTS

RESULTS Exerciptive analysis of vaniables in the sample Sample distribution according to age was pre-dominantly composed of children between and 5 years old (7.3% and 38.7%, respectively Regarding patients' wc, the sample was very we livided and comprised 434 females (49.7%) an 39 males (03.0%). As for race, most children ha rown skin (pathol (58%), whereas only 0.4% ha (low wkin.

proven skin (gardo) (58%), whereas only 0.4% nase cellow kin. The minority showed posterior crossible, total-ing 15.5% (or 153) a distribution in Table 1. As for the prevalence of the parafunctional habit of berus-ium, 26.5% of children had the habits ranghyt, 22% during the day, and 0.1% during the night and dur-ing the day, thereby representing a total of 28.8% of children with braxism. Out of the total sample, 2.18% (or 1900) reported having headaches while 36.1% (n = 315) claimed to have restres sleep.

# SAGGEDITO Televisor Distustion and other variables To assess a potential association between the pres-ence of Drawism and other variables, the sample was variable as a single set of the sample was taked as a follows: "No" (when the held inden showed gauge of bruxium as inght and/or day). The variable somerier croubite was also treated in a similar way "Absound" (when the child did not have posterior orbotics) and "Present" (when the child presented

y type of posterior crossbite). According to Table 2, the prevalence of bru Data analysis First, a descriptive statistical analysis of all vari-bables (age, see, race, posterior crossitie, brusian, beadache and restes sleep) was carried out. Sub-leadache and restes sleep) was carried out. Sub-sequently, analyses of statistical significance were erraces. Among children with no posterior crossitie,

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