



UMC Utrecht



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**Detekcia mozgových aneuryziem pomocou
umelej inteligencie**

Deep Art Medicine s.r.o.

www.deepartmedicine.com

26.03.2024

Background

- Premostenie sektorov
- Akadémia & Nemocnice & MSP



Ing. Tomáš Koščo ,
CEO



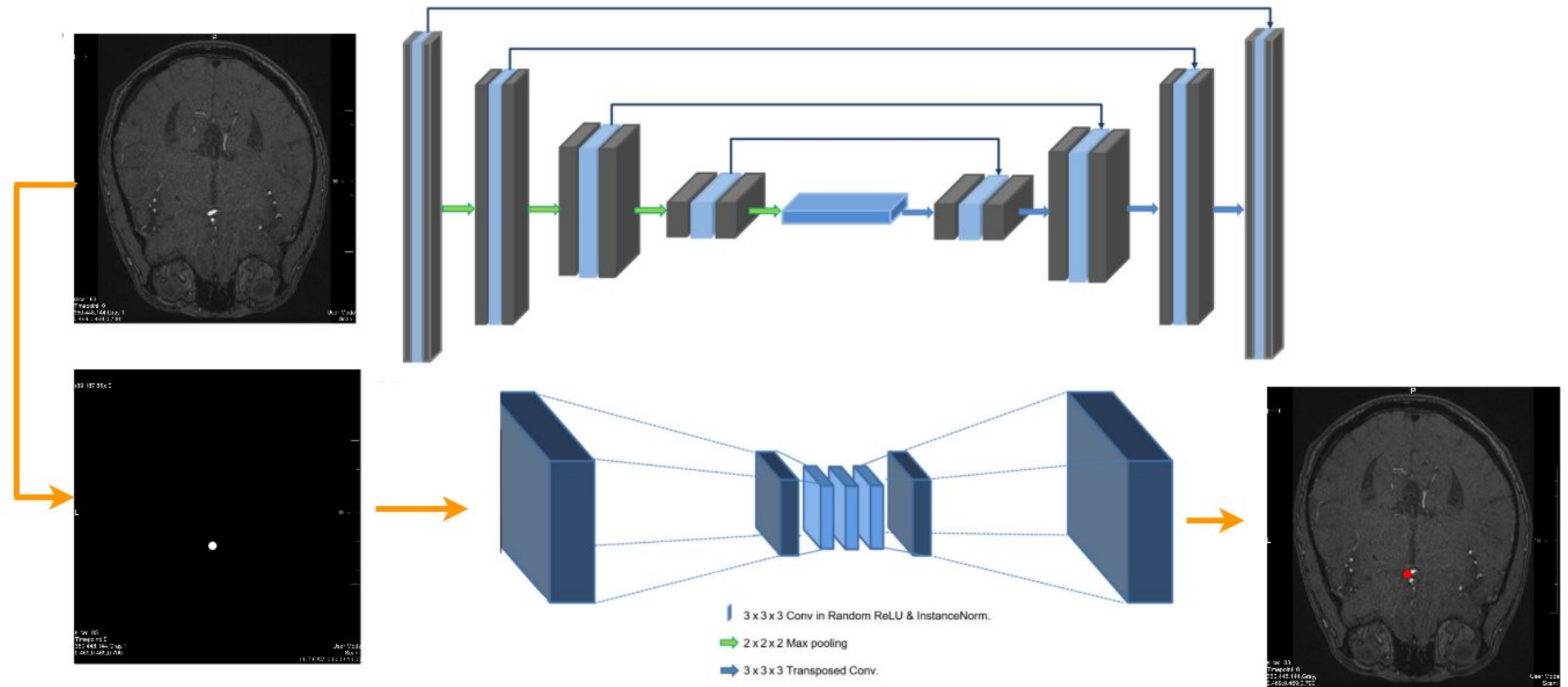
MSc. Denis Kutnár,
CTO,
PhD at KU



MSc. Jason Van Schoor,
CMIO,
PhD at ETH

Detection of aneurysms

- TOF-MRA
- Weak labels
- Pre-processing
- Parameter space

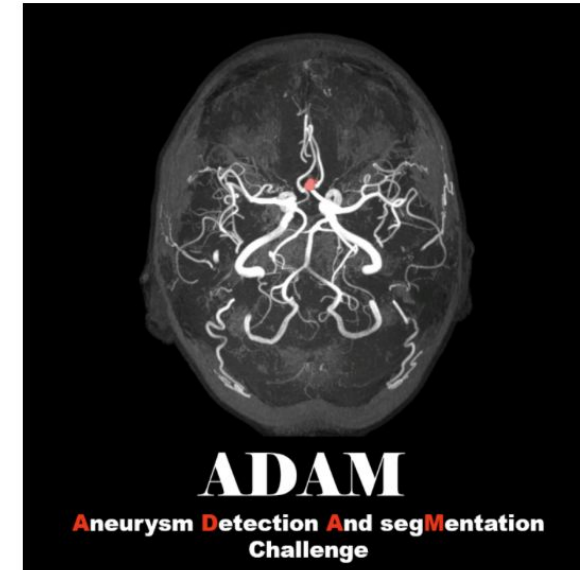


Inference

The screenshot shows the 'Deep Art Medicine' web application interface. At the top left, the logo and name 'Deep Art Medicine' are visible. To the right, there is a 'Plane' selector with buttons for 'Axial', 'Coronal', and 'Sagittal'. Further right, the user is logged in as 'denis.kutnar@gmail.com' with a 'Sign Out' button. The main area is a large dark rectangle containing an axial MRI scan of a brain with white prediction masks highlighting several areas. On the right side, there is a control panel with two buttons: 'Upload NIFTI' and 'Predict'. Below these, the 'Uploaded file' is listed as 'Aneurysms_059_0000.nii.gz'. There are three sliders for 'Scroll', 'Brightness', and 'Contrast'. At the bottom of the control panel, there is a checkbox labeled 'Prediction' with the option 'Hide prediction mask'.

Evaluation

- Sensitivity: 0.76
- Precision: 0.81



Sensitivity vs Precision?

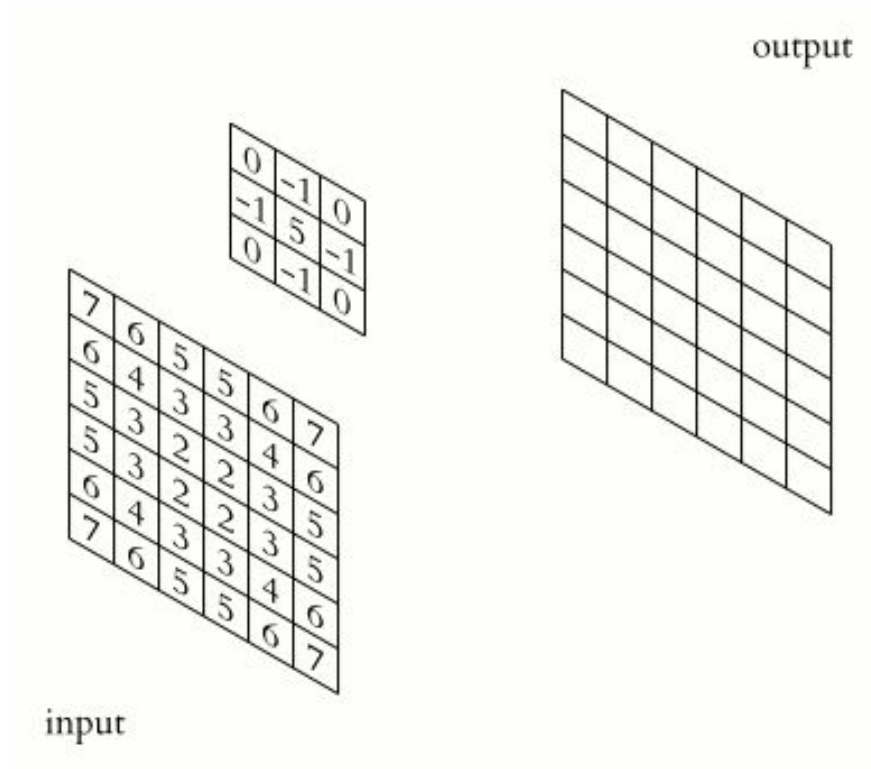
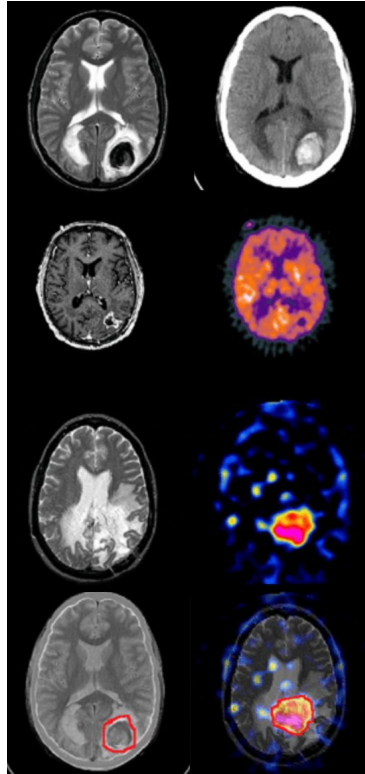
Place ^	Team ^	Sensitivity ^	False Positive count ^	Ranking ^
1	mibaumgartner	0.66	0.14	0.03
2	joker	0.63	0.16	0.06
3	junma	0.61	0.18	0.07
4	kubiac	0.60	0.36	0.08
5	xlim	0.70	4.03	0.09
6	inteneural	0.49	0.88	0.17
7	zelosmediacorp	0.21	0.05	0.36
8	stronger	0.20	0.45	0.38
9	unil_chuv	0.20	1.45	0.40
10	ibbm	0.02	0.01	0.50
11	tum_ibbm	0.43	22.62	0.70



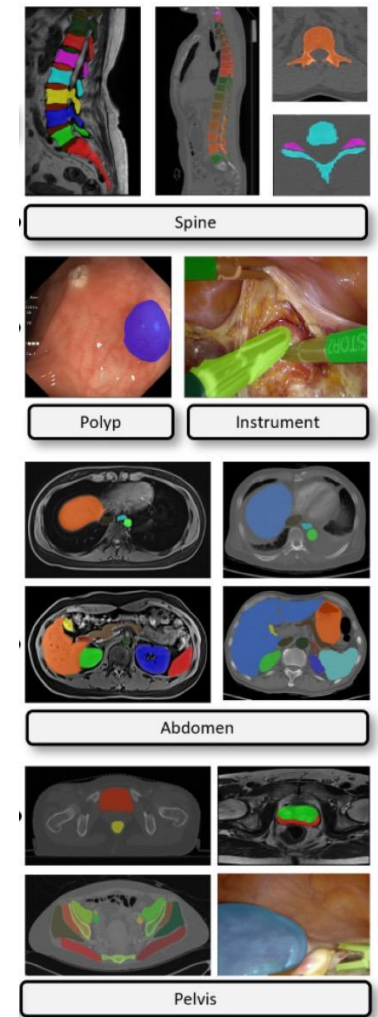


Expertiza

MRI, CT, US, PET, X-Ray

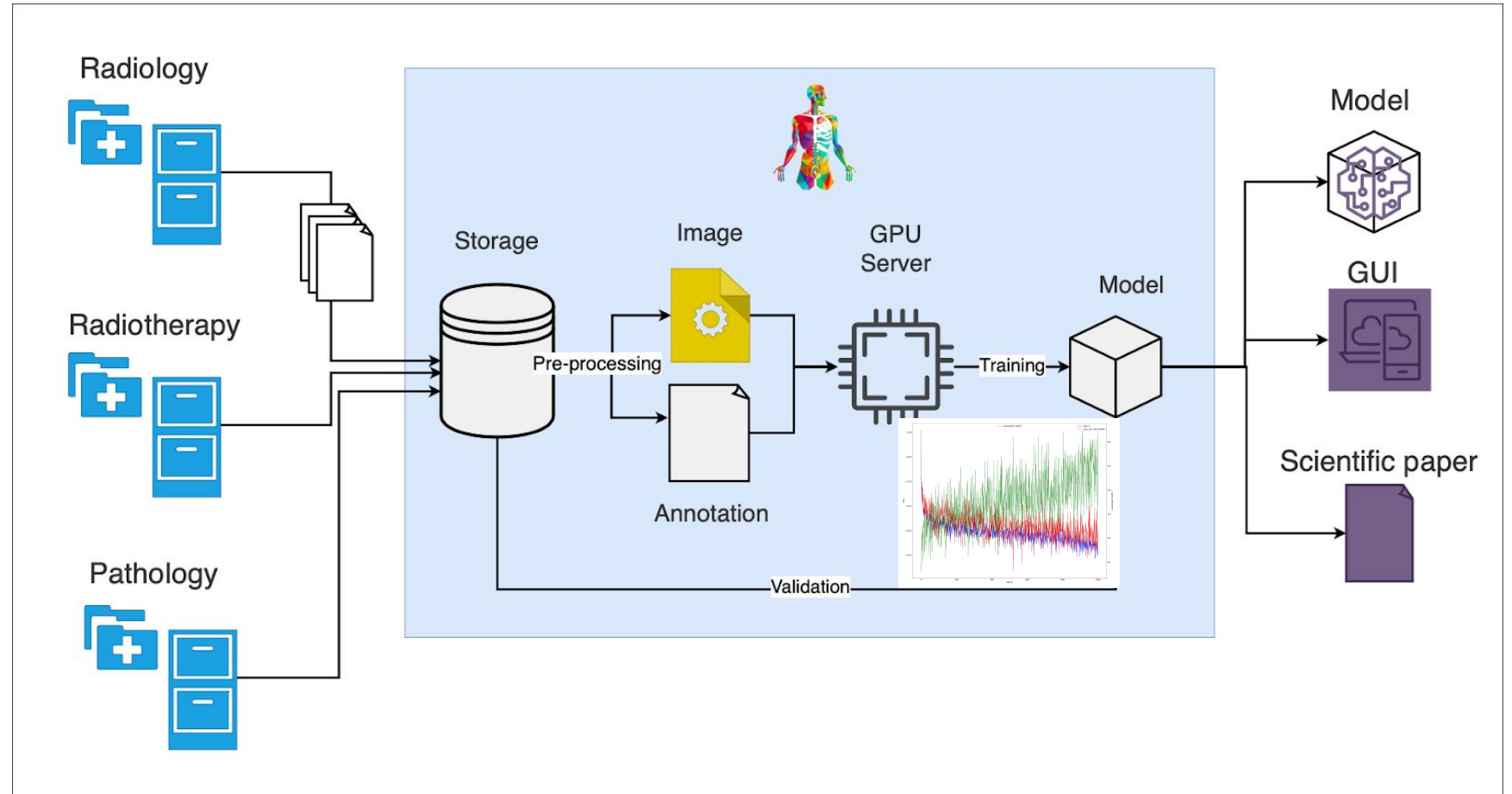


Segmentation, Detection, Classification



Workflow

- Problem definition
- Methodology selection





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