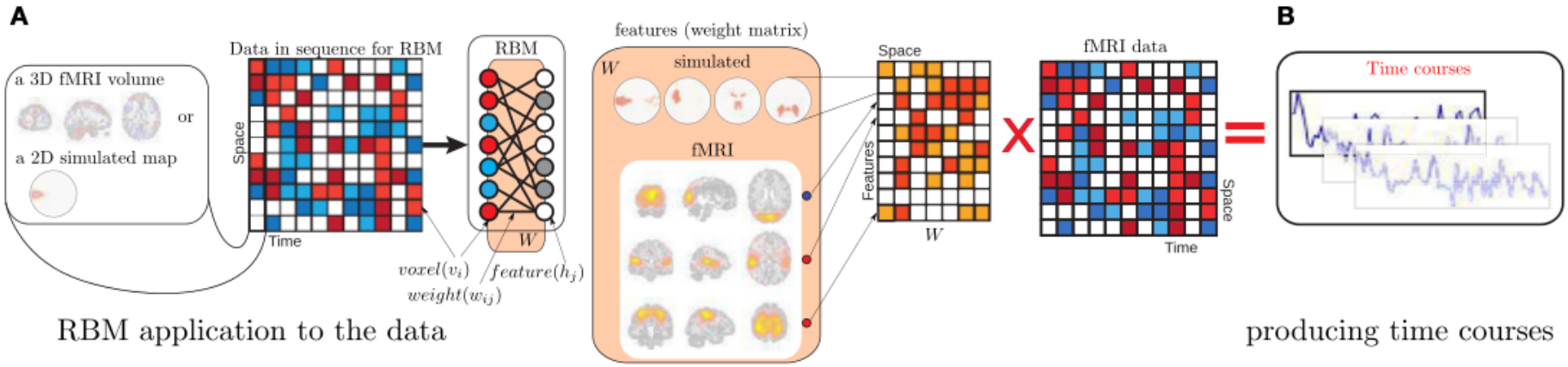
Глубокое обучение на данных МРТ и фМРТ

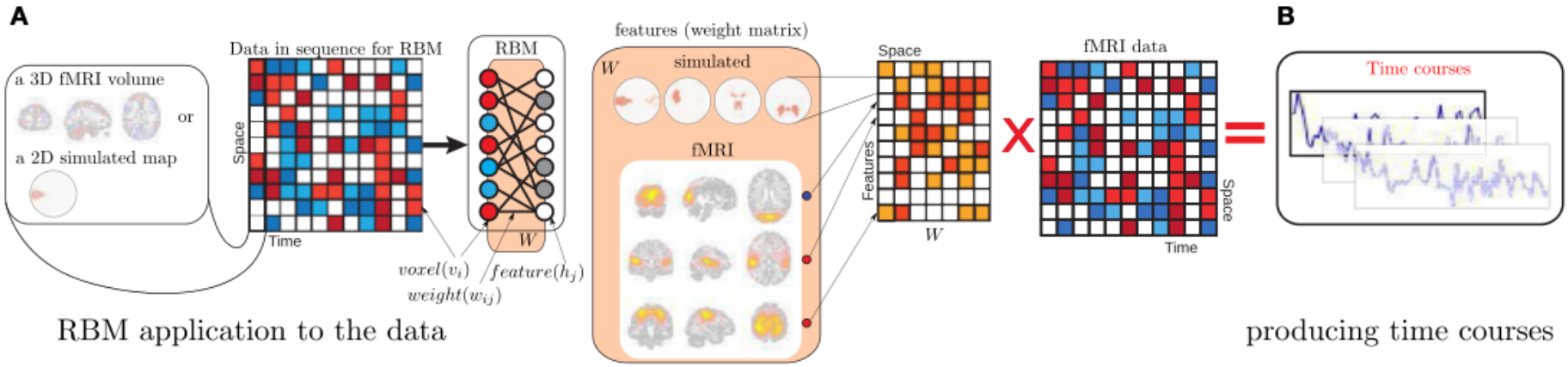
Сергей Королев
22 июля 2016

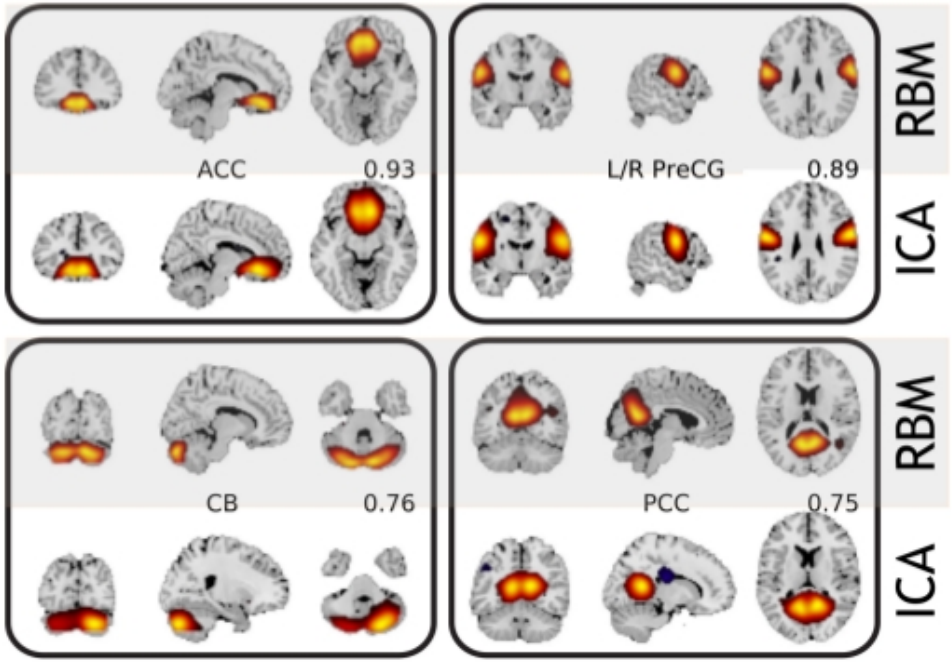
Задача выделения признаков

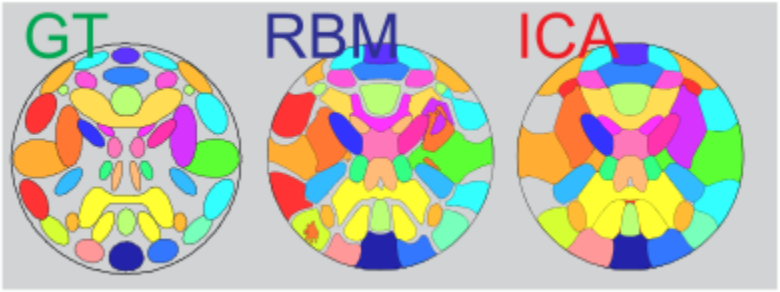


Plis et al. (2014) Deep learning for neuroimaging: a validation study. Frontiers in Neuroscience, 8, 229

Задача выделения признаков







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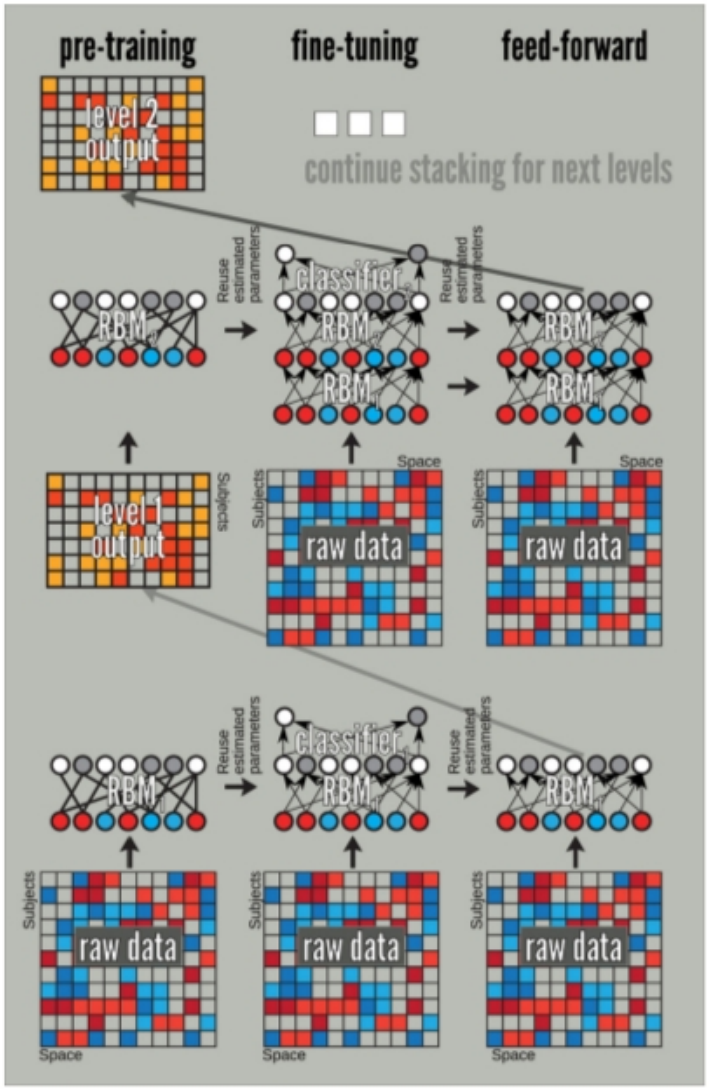
Задача классификации



Depth	Raw	1	2	3
SVM F-score	0.68 ± 0.01	0.66 ± 0.09	0.62 ± 0.12	0.90 ± 0.14
LR .F-score	0.63 ± 0.09	0.65 ± 0.11	0.61 ± 0.12	0.91 ± 0.14
KNN F-score	0.61 ± 0.11	0.55 ± 0.15	0.58 ± 0.16	0.90 ± 0.16

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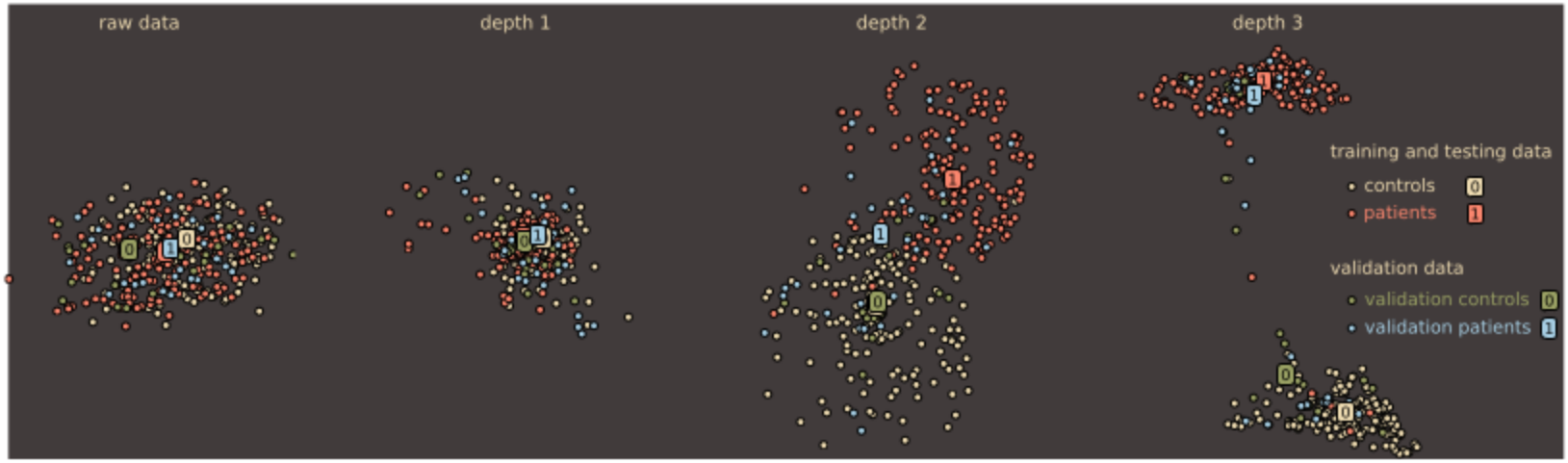

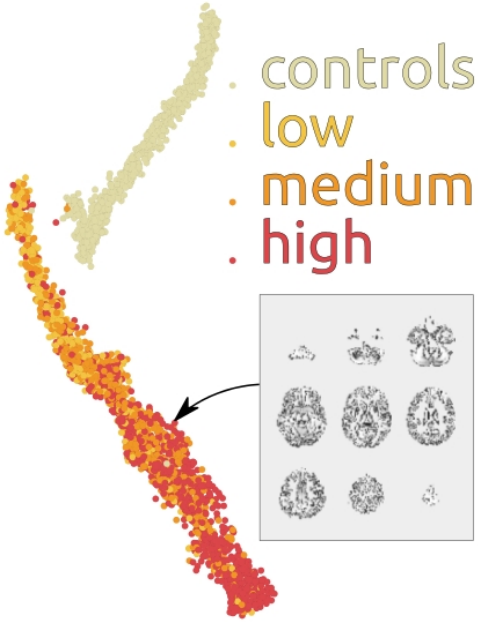

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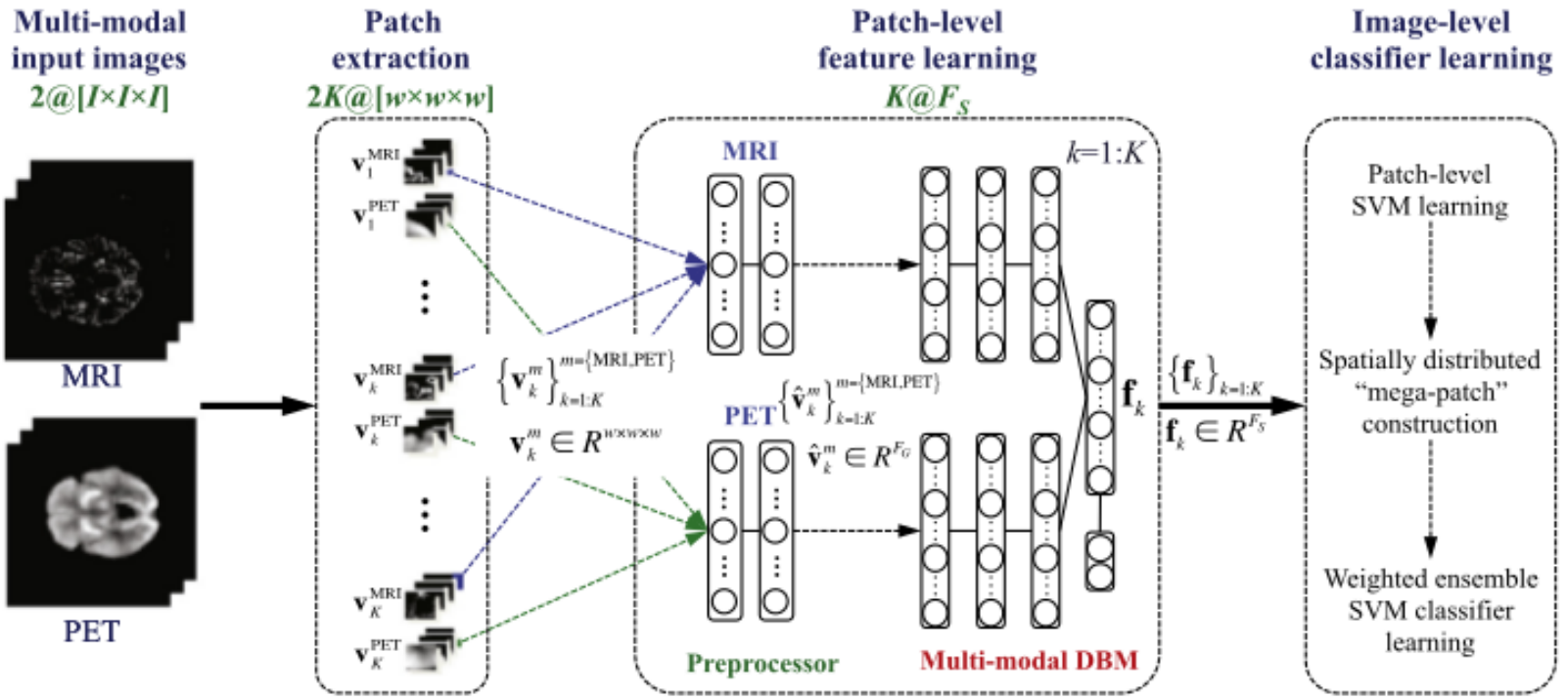
Задача интеграции мультимодальных данных



Suk et al. (2014) Hierarchical feature representation and multimodal fusion with deep learning for AD/MCI diagnosis. NeuroImage, 101, 569-582

Интересные примеры:

Plis et al. (2014) Deep learning for neuroimaging: a validation study. Frontiers in Neuroscience, 8, 229

Suk et al. (2014) Hierarchical feature representation and multimodal fusion with deep learning for AD/MCI diagnosis. NeuroImage, 569-582

Kim et al. (2016) Deep neural network with weight sparsity control and pre-training extracts hierarchical features and enhances classification performance: Evidence from whole-brain resting-state functional connectivity patterns of schizophrenia. NeuroImage, in press

Спасибо!