

USE CASE 2 -

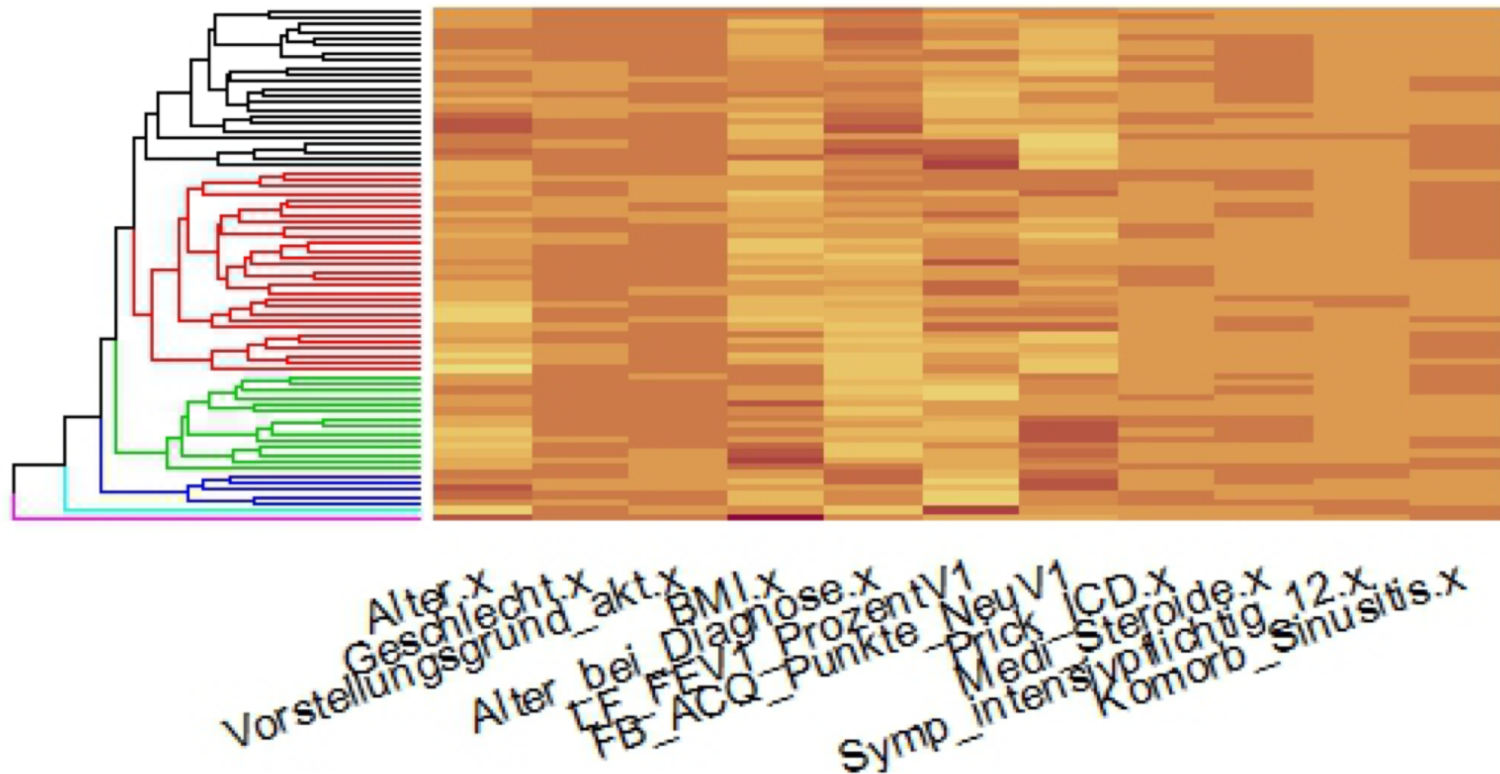
PRÄDIKTIONSMODELLE FÜR ASTHMA/COPD UND HIRNTUMORE

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MIRACUM Symposium

Deutsches Register Schweres Asthma



New Brain Tumor Entities Emerge from Molecular Classification of CNS-PNETs

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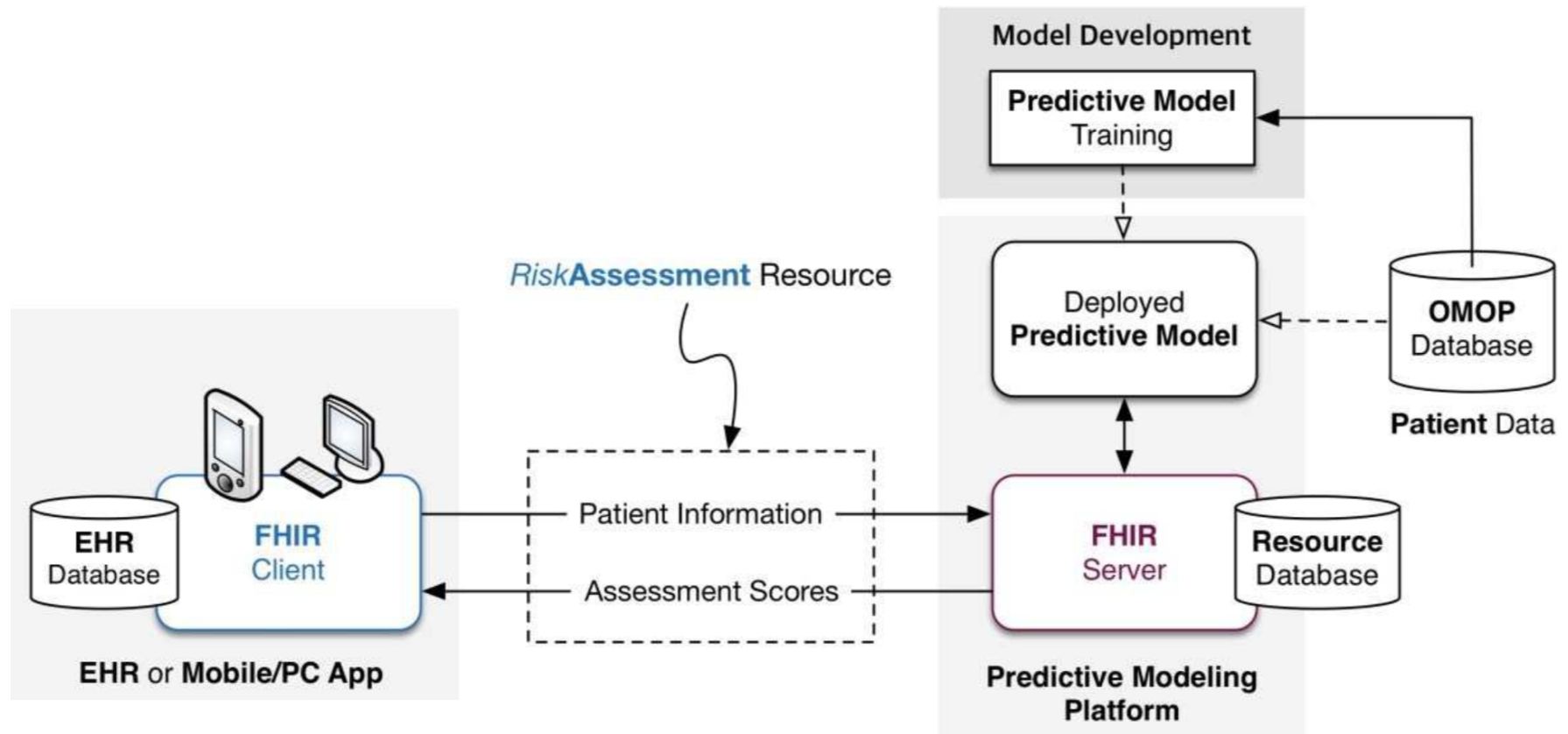
SUMMARY

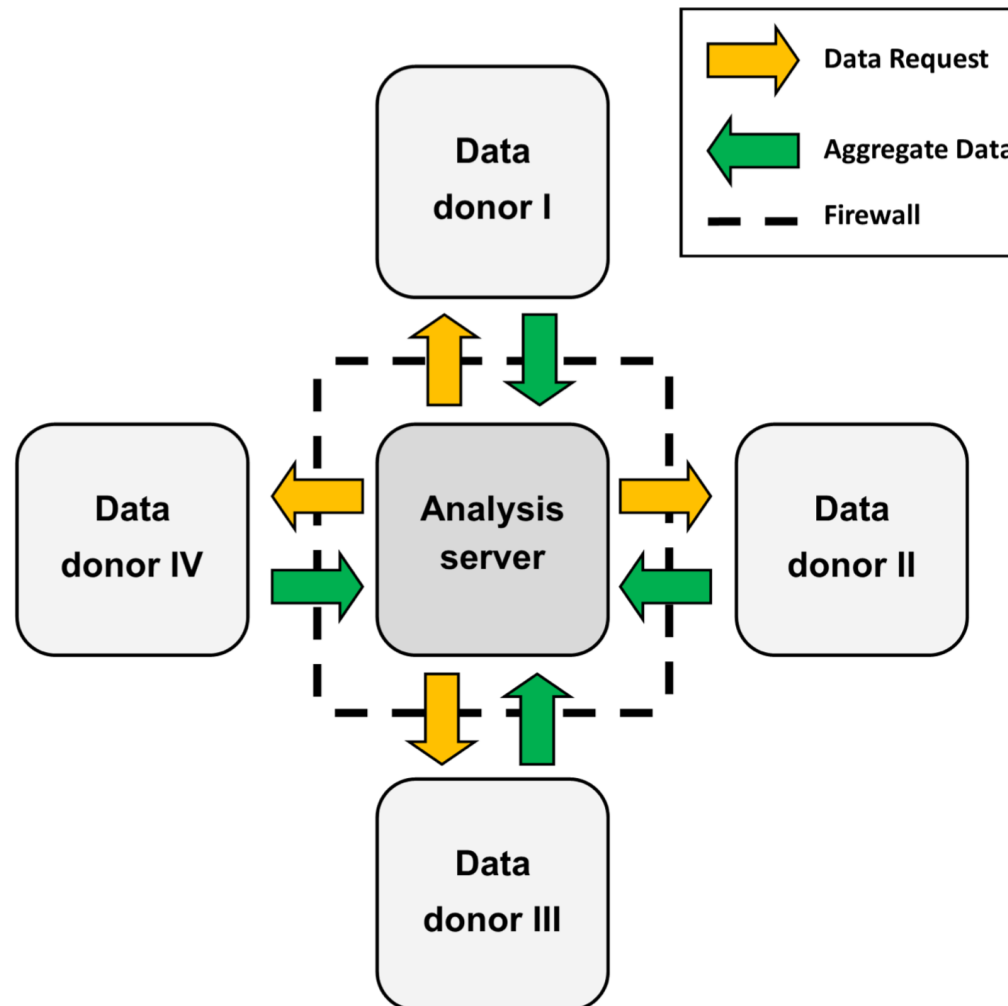
Primitive neuroectodermal tumors of the central nervous system (CNS-PNETs) are highly aggressive, poorly differentiated embryonal tumors occurring predominantly in young children but also affecting adolescents and adults. Herein, we demonstrate that a significant proportion of institutionally diagnosed CNS-PNETs display molecular profiles indistinguishable from those of various other well-defined CNS tumor entities, facilitating diagnosis and appropriate therapy for patients with these tumors. From the remaining fraction of CNS-PNETs, we identify four new CNS tumor entities, each associated with a recurrent genetic alteration and distinct histopathological and clinical features. These new

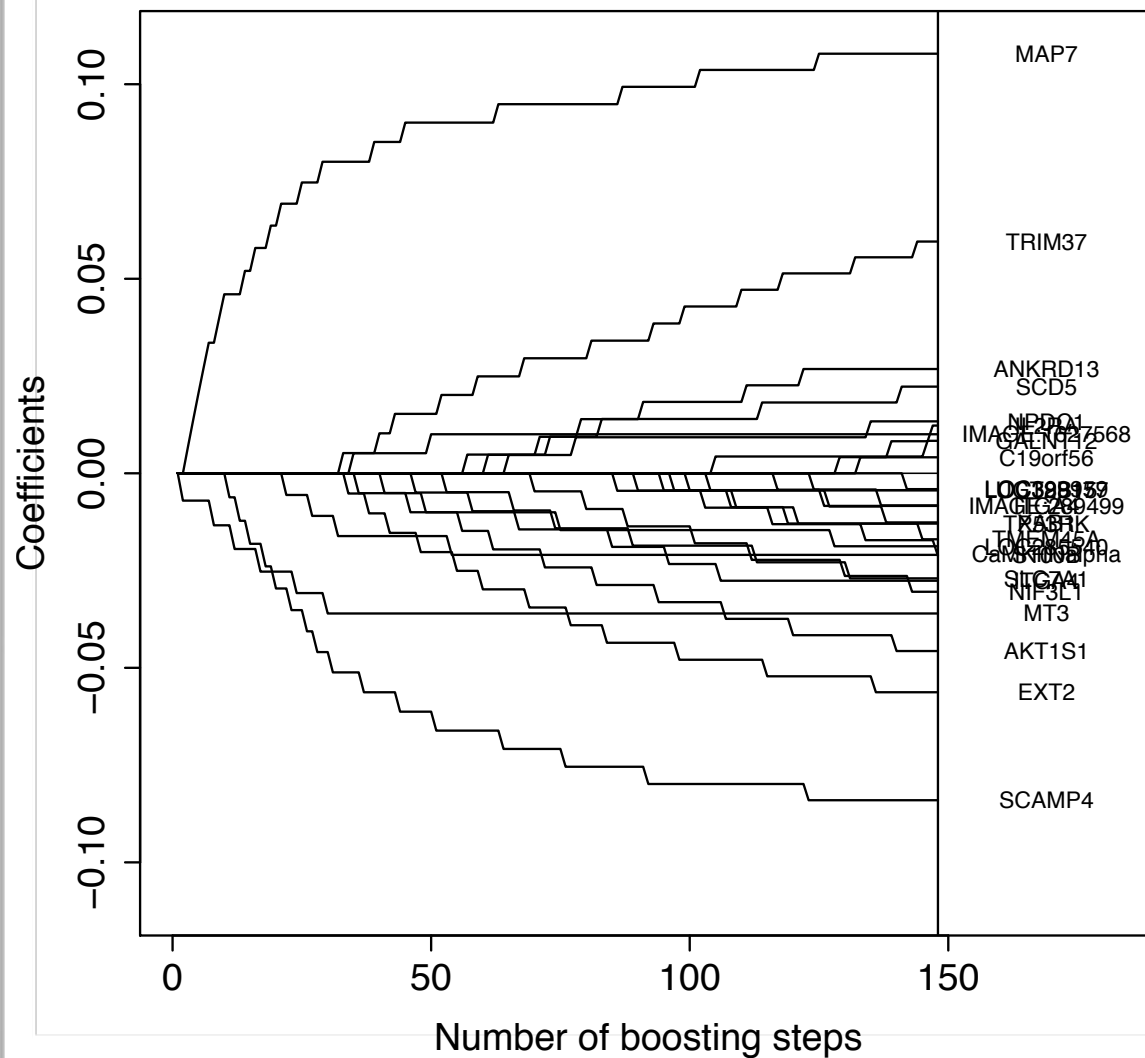
molecular entities, designated “CNS neuroblastoma with *FOXR2* activation (CNS NB-*FOXR2*),” “CNS Ewing sarcoma family tumor with *CIC* alteration (CNS EFT-*CIC*),” “CNS high-grade neuroepithelial tumor with *MN1* alteration (CNS HGNET-*MN1*),” and “CNS high-grade neuroepithelial tumor with *BCOR* alteration (CNS HGNET-*BCOR*),” will enable meaningful clinical trials and the development of therapeutic strategies for patients affected by poorly differentiated CNS tumors.

INTRODUCTION

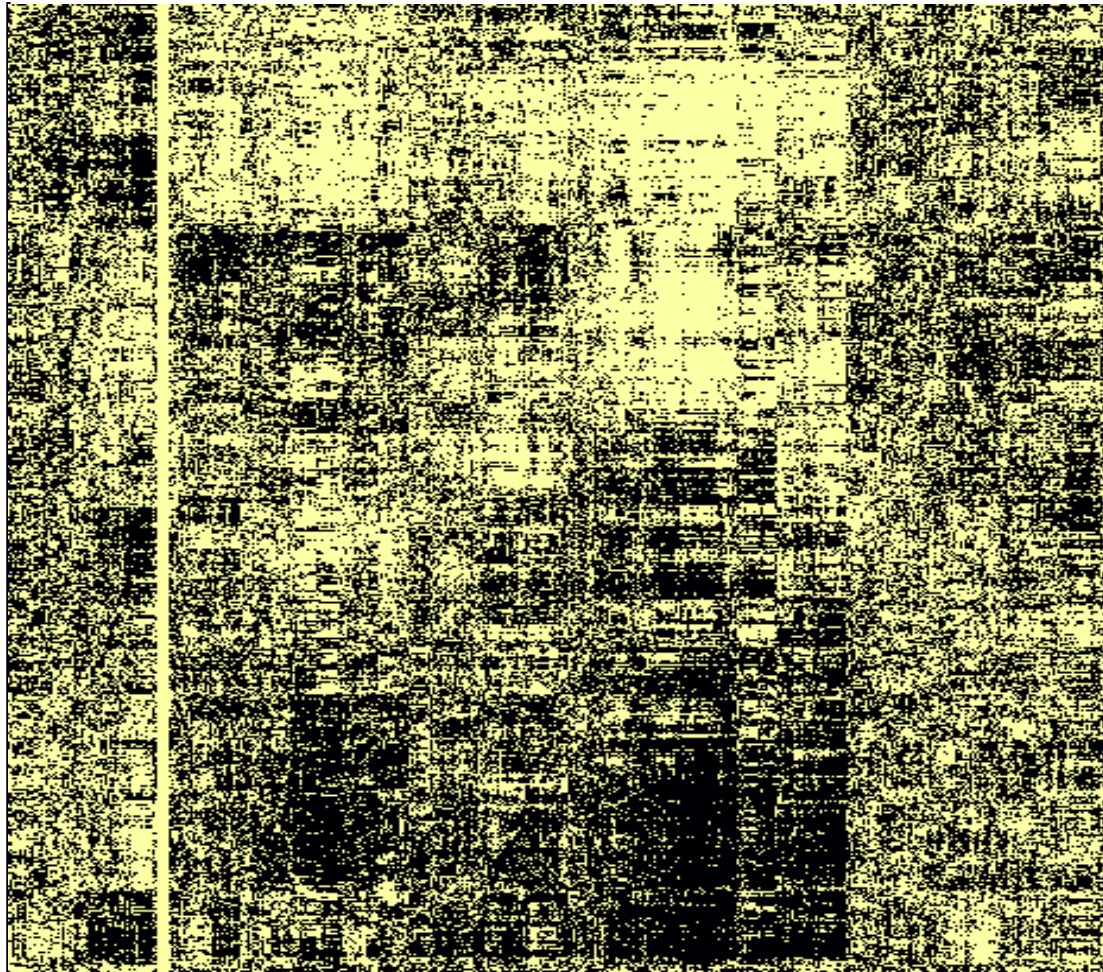
The CNS comprises many different pluripotent and differentiated cell types that vary greatly in abundance during human lifespan. This is reflected by a broad diversity of CNS tumor entities, some



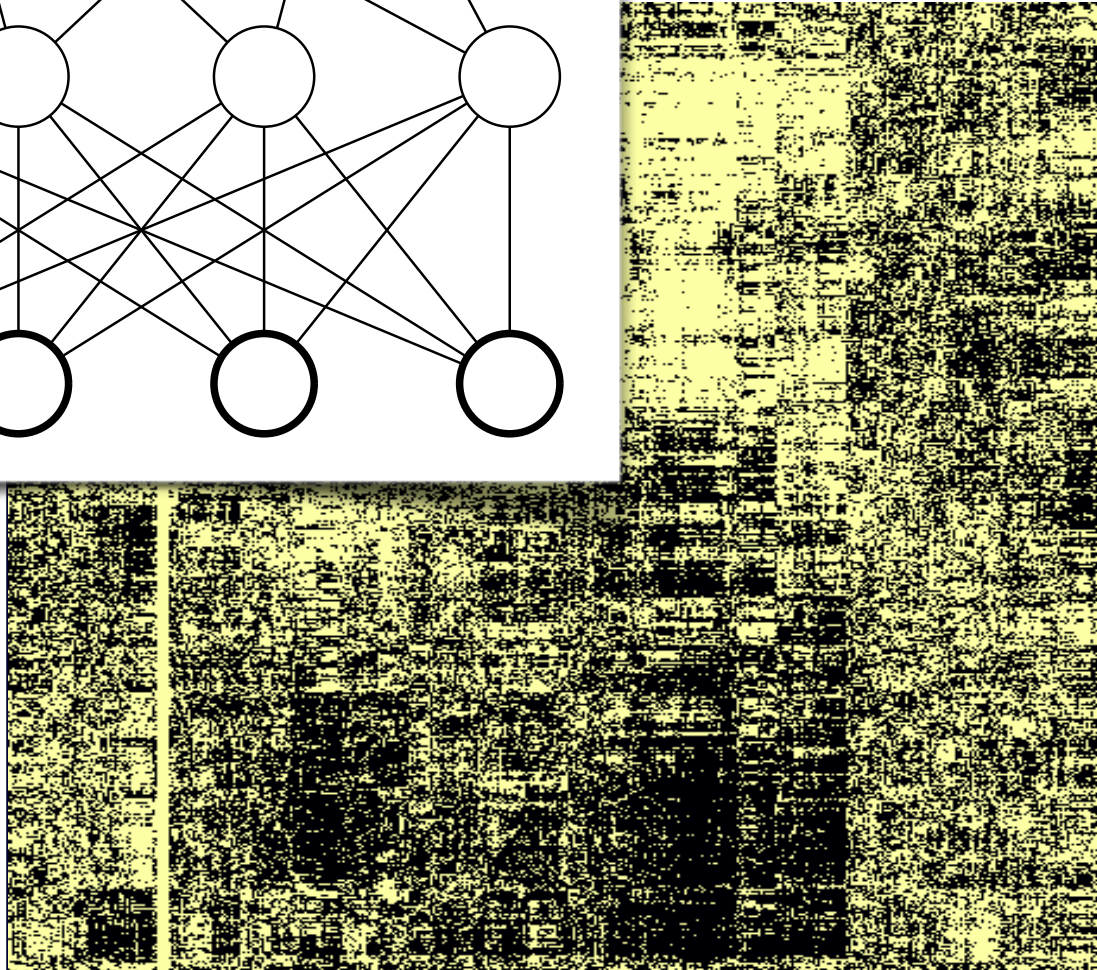
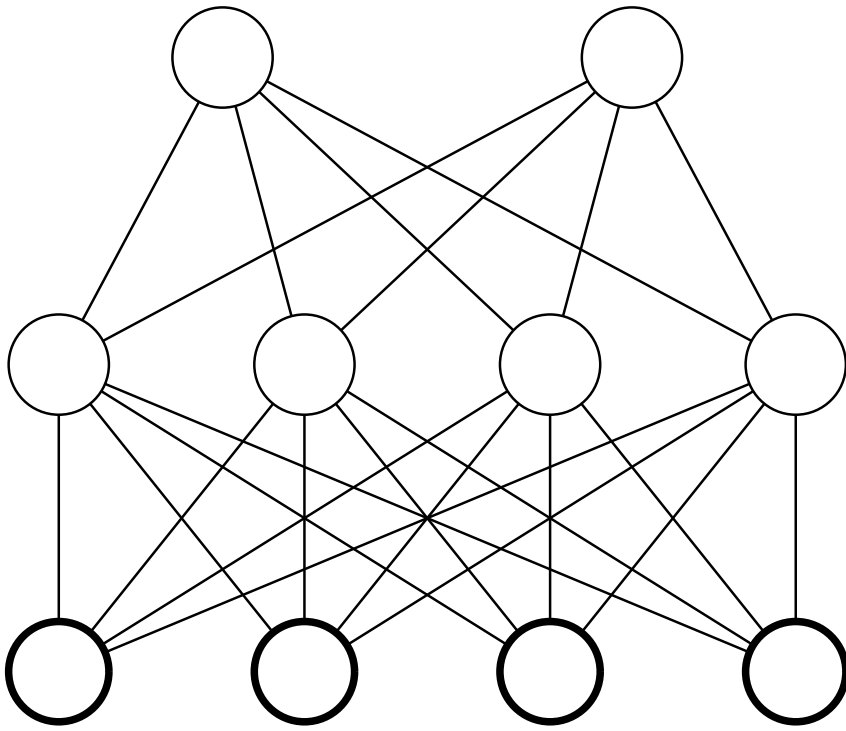


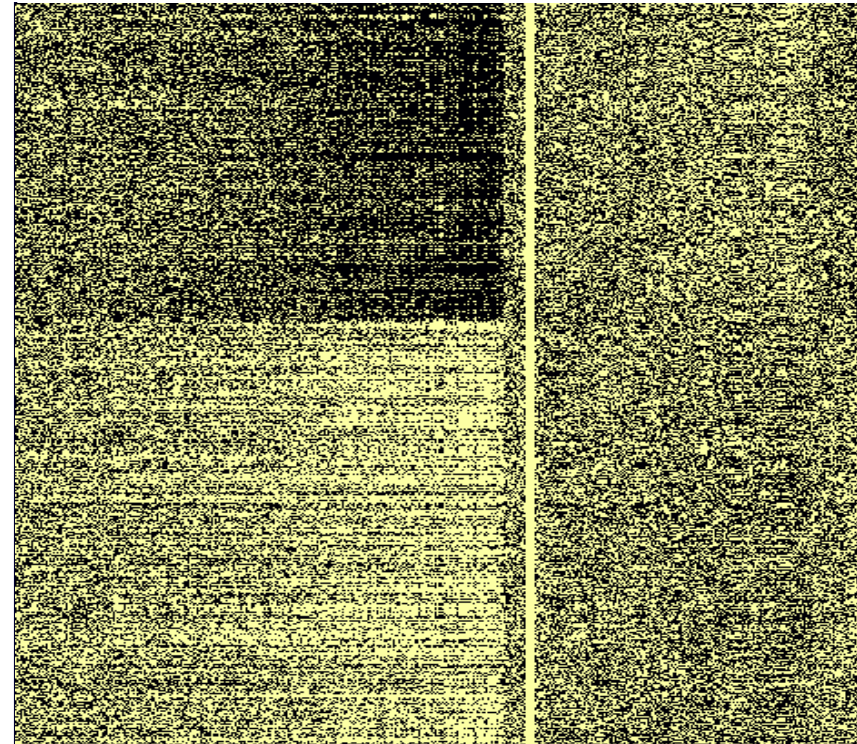
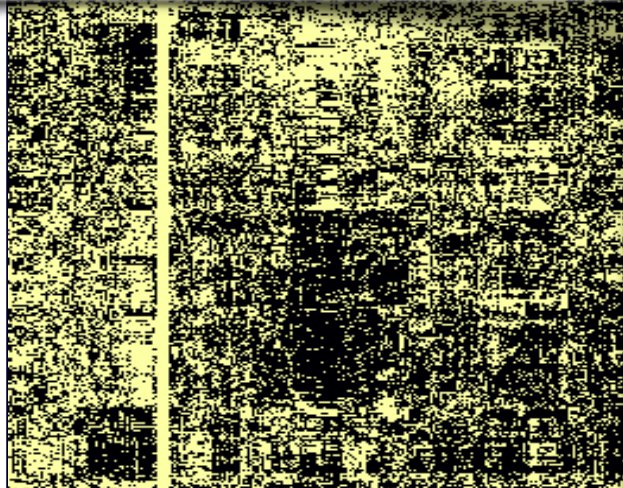
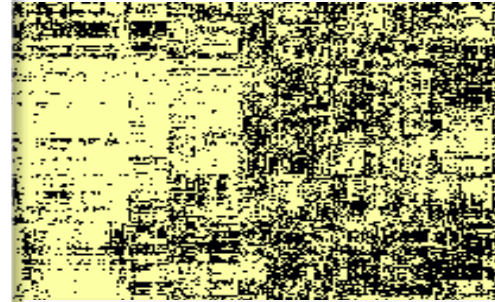
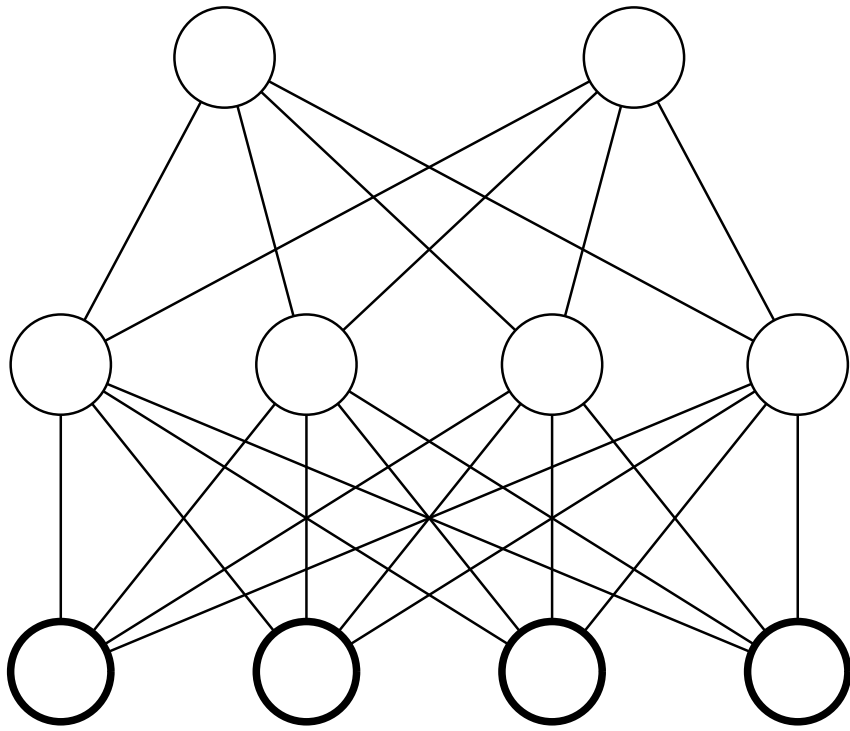


Deep Boltzmann Machines

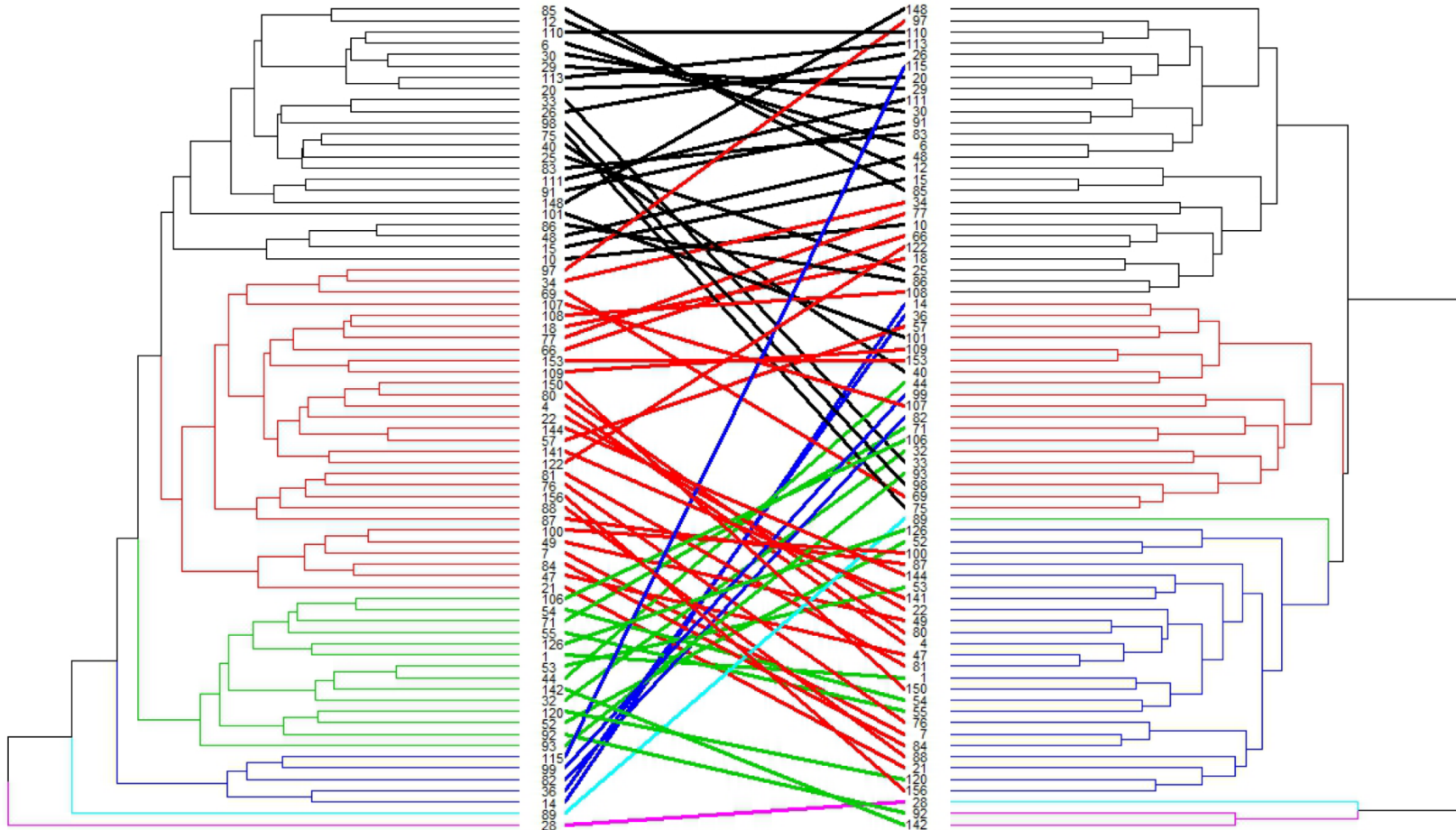


Hess et al. (2017)





Asthma: Clustering im Zeitverlauf



Vielen Dank für Ihre Aufmerksamkeit



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