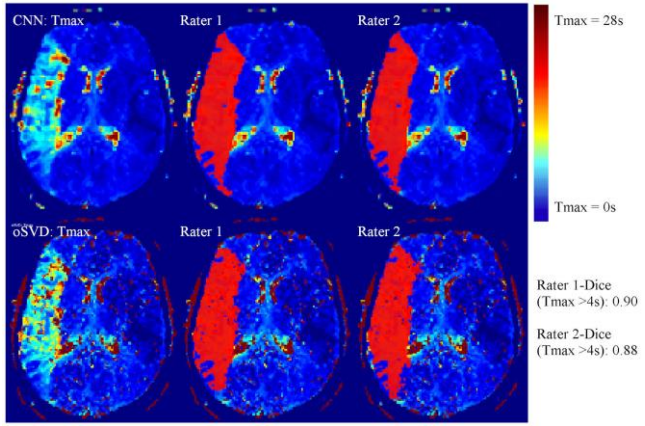
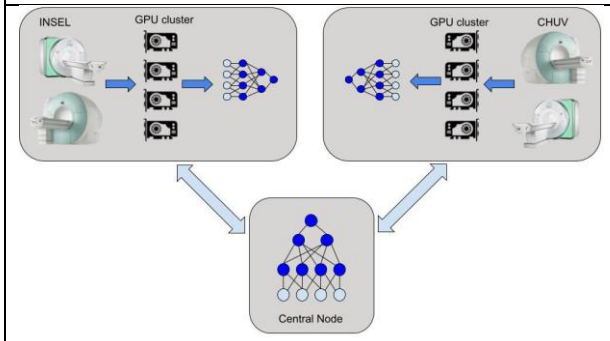
INSELGRUPPE

UNIVERSITÄT BERN

Medieninformation, Bilder

9. März 2021

Hirnschlag mit künstlicher Intelligenz wirksamer behandeln dank Verbundlernen

	Hirn-Perfusionskarte; Oben mit Convolutional Neural Network (CNN) und unten mit der klassischen Methode eines Patienten mit akutem Hirnschlag. Unser voll-automatisiertes System liefert Perfusionskarten in Bruchteilen der Zeit, die ein herkömmliches System braucht. Die Beurteilung durch Experten führt dabei zu identischen Behandlungsentscheiden. Brain perfusion map generated by our own CNN method (top) and a CE marked perfusion software (bottom), showing a blood flow parameter in a patient with acute stroke. Our fully automatic system method delivers perfusion maps in a fraction of the time required by the standard software and when interpreted by human raters led to identical patient treatment decisions. Source: https://doi.org/10.1148/ryai.2019190019, fig. 4
	In our federated learning setup, a copy of a deep learning model is held at a central coordinating node. This node never sees patient data: instead, it sends copies of the network to the participating hospitals, which then use their data to identify where the model can be improved using their own GPU clusters located within the hospital. These improvements are sent back to the central node, which averages the improvements and returns the new model. Patient data is preserved within the individual centers, and new hospitals may easily join the training procedure at any time. Illustration: R. McKinley, Inselspital

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