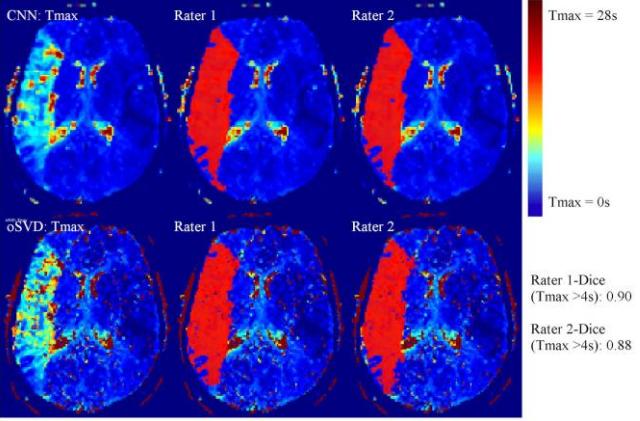
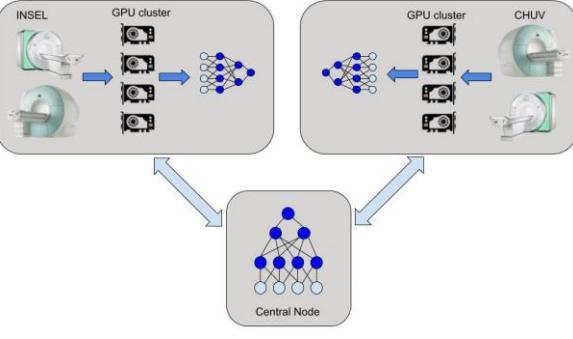


Medieninformation, Bilder

9. März 2021

Hirnschlag mit künstlicher Intelligenz wirksamer behandeln dank Verbundlern

| | |
|--|--|
|  <p>The figure displays two sets of axial brain slices showing blood flow parameters. The top row, labeled 'CNN: Tmax', shows results from two raters (Rater 1 and Rater 2) using a Convolutional Neural Network. The bottom row, labeled 'SVD: Tmax', shows results from the same two raters using a standard software. A color scale on the right indicates the Tmax value, ranging from 0s (blue) to 28s (red). Below the slices, dice similarity coefficients are listed: Rater 1-Dice (Tmax >4s): 0.90 and Rater 2-Dice (Tmax >4s): 0.88.</p> | <p>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.</p> <p>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.</p> <p>Source: https://doi.org/10.1148/ryai.2019190019, fig. 4</p> |
|  <p>The diagram illustrates a federated learning setup. It shows two hospital sites, INSEL and CHUV, each with its own GPU cluster. Data from these clusters is sent to a central node, labeled 'Central Node'. The central node contains a deep learning model represented by a neural network diagram. Arrows indicate the flow of data from the local clusters to the central node, where the model is updated and then sent back to the clusters for further improvement.</p> | <p>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.</p> <p>Illustration: R. McKinley, Inselspital</p> |

| | |
|---|---|
|  A portrait photograph of Dr. Richard Iain McKinley, a man with short brown hair and glasses, wearing a blue shirt and a brown jacket. | <p>Dr. Richard Iain McKinley PhD, Research Scientist in medical image analysis, Inselspital, Universitätsspital Bern</p> <p>Dr. Richard Iain McKinley PhD, Research Scientist in medical image analysis, Inselspital, Universitätsspital Bern</p> <p>Photo: Insel Gruppe</p> |
|  A portrait photograph of Prof. Dr. med. Roland Wiest, a man with dark hair and glasses, wearing a white lab coat over a white shirt. | <p>Prof. Dr. med. Roland Wiest, Stv. Chefarzt Universitätsinstitut für Diagnostische und Interventionelle Neuroradiologie, Inselspital, Universitätsspital Bern</p> <p>Prof. Dr. med. Roland Wiest, Deputy Chief of University Department of diagnostic and interventional Neuroradiology, Inselspital, University Hospital Bern</p> <p>Photo: Insel Gruppe</p> |