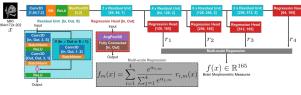
## GOING DEEPER WITH BRAIN MORPHOMETRY USING NEURAL NETWORKS

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This paper introduces **HerstonNet** an accurate and efficient neural network regression model for brain morphometry from MRI.

## HerstonNet:

- predicts the volume of **29 subcortical structures** and the thickness and curvature of **68 cortical parcellations** directly from T1-w MRIs.
- has a 3D-ResNet architecture with multiple regression "heads" to better predict brain morphometry of different structures.
- uses Stochastic Weight Averaging (SWA) to avoid bad local minimum reducing the prediction error variance and overfitting.

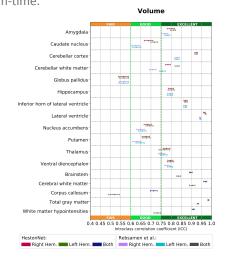


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## Results:

- Data: 9310 MRIs from ADNI and AIBL studies annotated with brain morphometry of FreeSurfer V6 pipeline.
- HerstonNet outperforms the existing approach by 24.30% in terms of intraclass correlation coefficient while maintaining a competitive run-time.



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