

APPLICATIONS ALL THE WAY

Inpainting Cropped Diffusion MRI using Deep Generative Models

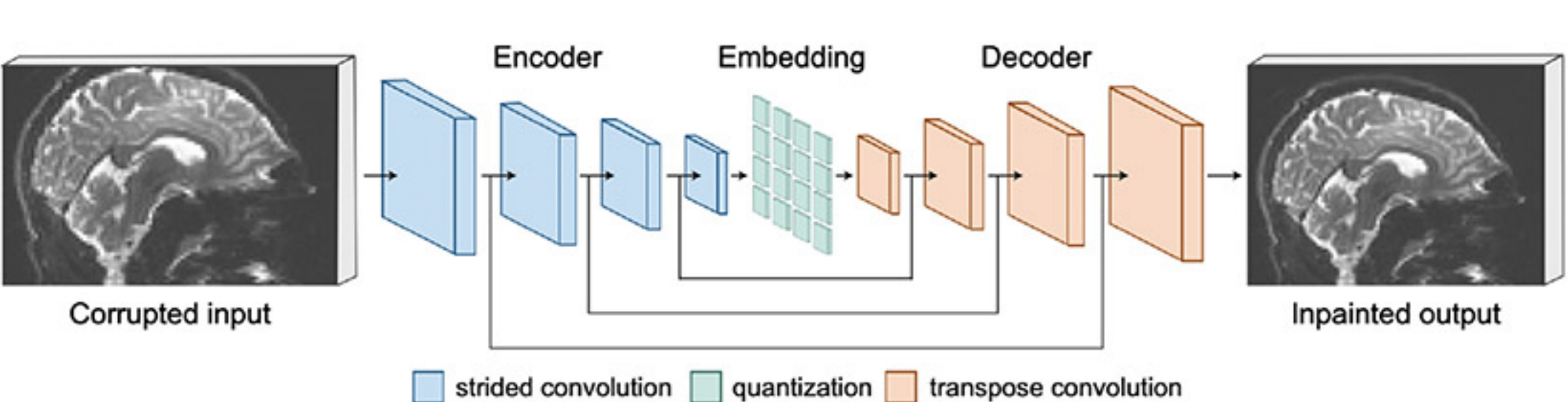
[Rafi Ayub](#)¹, [Qingyu Zhao](#)¹, [M. J. Meloy](#)³, [Edith V. Sullivan](#)¹, [Adolf Pfefferbaum](#)^{1,2}, [Ehsan Adeli](#)¹ and [Kilian M. Pohl](#)^{1,2}

[Author information](#) [Copyright and License information](#) [Disclaimer](#)

Abstract

[Go to:](#)

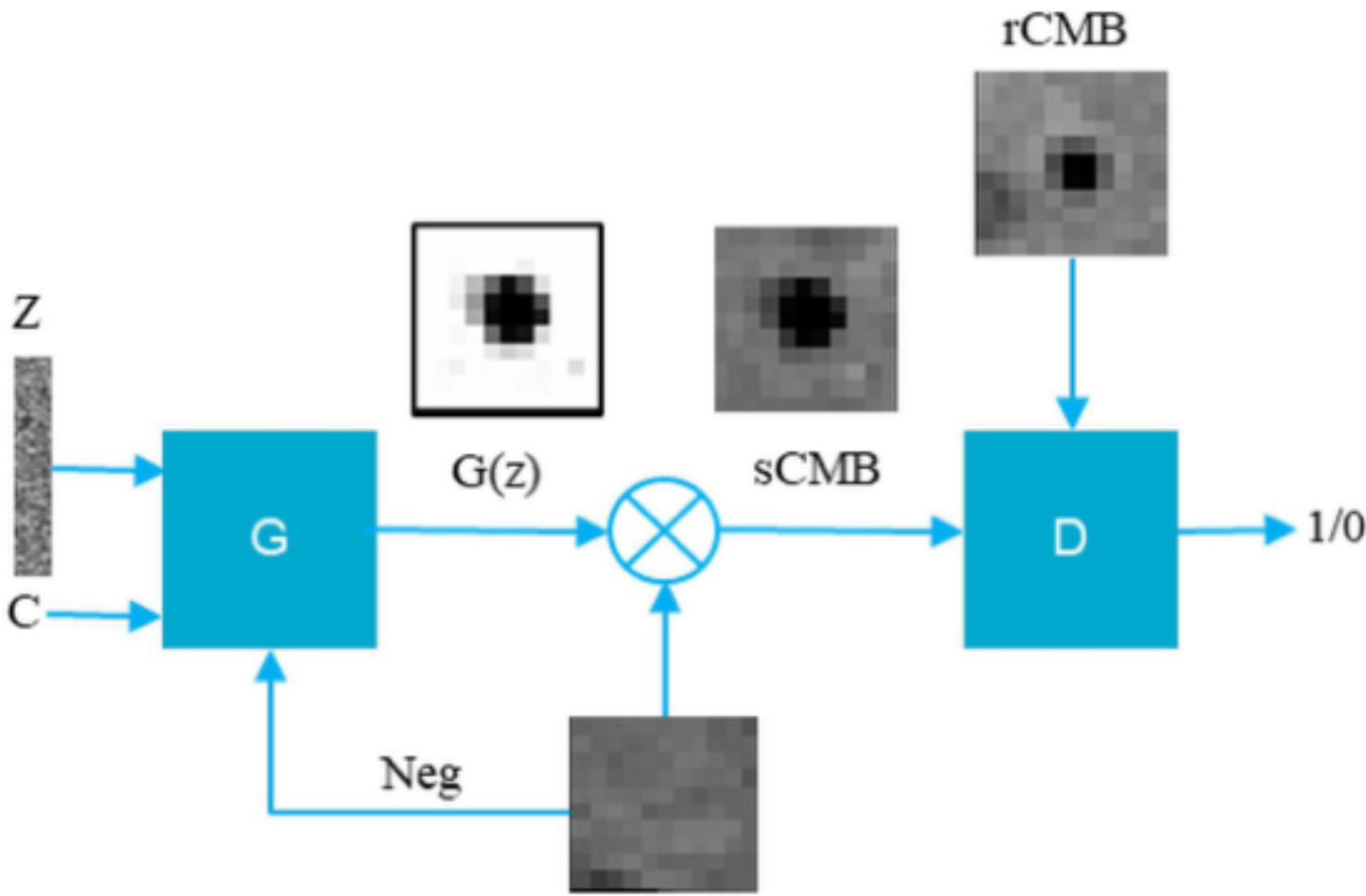
Minor artifacts introduced during image acquisition are often negligible to the human eye, such as a confined field of view resulting in MRI missing the top of the head. This cropping artifact, however, can cause suboptimal processing of the MRI resulting in data omission or decreasing the power of subsequent analyses. We propose to avoid data or quality loss by restoring these missing regions of the head via variational autoencoders (VAE), a deep generative model that has been previously applied to high



Generative Model of Brain Microbleeds for MRI Detection of Vascular Marker of Neurodegenerative Diseases

[Saba Momeni](#)^{1,2}, [Amir Fazlollahi](#)^{3,4}, [Leo Lebrat](#)³, [Paul Yates](#)⁵, [Christopher Rowe](#)^{6,7}, [Yongsheng Gao](#)², [Alan Wee-Chung Liew](#)⁸ and [Olivier Salvado](#)^{1,9*}

¹ Commonwealth Scientific and Industrial Research Organisation (CSIRO) Data61, Brisbane, QLD, Australia
² School of Engineering and Built Environment, Griffith University, Nathan, QLD, Australia
³ Commonwealth Scientific and Industrial Research Organisation (CSIRO) Health and Biosecurity, Australian E-Health Research Centre, Brisbane, QLD, Australia



MORE ON THE WAY

WHAT DOES DALL-E 2 KNOW ABOUT RADIOLOGY?

A PREPRINT

● **Lisa C. Adams***

Department of Radiology
Stanford University School of Medicine
Stanford, CA, USA
lcadams@stanford.edu

● **Felix Busch***

Department of Radiology
Charité – Universitätsmedizin Berlin
Berlin, Germany
felix.busch@charite.de

● **Daniel Truhn**

Department of Diagnostic and Interventional Radiology
University Hospital Aachen
Aachen, Germany
dtruhn@ukaachen.de

● **Marcus R. Makowski**

Department of Diagnostic and Interventional Radiology
School of Medicine and Klinikum Rechts der Isar
Technical University of Munich
Munich, Germany
marcus.makowski@tum.de

● **Hugo JWL. Aerts**

Artificial Intelligence in Medicine (AIM) Program
Mass General Brigham, Harvard Medical School
Boston, MA, USA