

MINI-SCHOOL

NITheCS

National Institute for
Theoretical and Computational Sciences

Introduction to Neuromorphic Computing

Dr Dean Brand (Stellenbosch University)

Attend three online lectures:

Wednesday, 11, 18 & 25 March 2026 | 14h00-15h00 SAST

ABSTRACT

Neuromorphic computing is a paradigm of computation that aims to solve many of the shortcomings of modern computation through taking inspiration from organic brains and how information is processed in nature. This mini-school will cover a brief introduction and hands-on interaction with the vast and rapidly developing field of neuromorphic computing. From biological inspirations of information processing to hardware developments and powerful algorithms with immediate applications in familiar tools like PyTorch, participants will gain all the tools required to partake in the next generation of computation. Prior knowledge of the basics of machine learning and neural networks will be beneficial, but not crucial.

BIOGRAPHY



Dean is a postdoctoral researcher at Stellenbosch University (SU) in the Quantum Research Group, under the supervision of Prof Francesco Petruccione. His research is on merging quantum and neuromorphic computing principles and paradigms for novel algorithms and architectures. His research has historically evolved through astrophysics, theoretical physics, and open quantum systems.

Dean received his Bachelor of Science and Honours degrees from the University of the Witwatersrand, his Master's from the University of KwaZulu-Natal, and his PhD from SU.

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