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Title:	Vertex finding in neutrino-nucleus interaction
Other Titles:	a model architecture comparison
Authors:	Jena, Satyajit (/jspui/browse?type=author&value=Jena%2C+Satyajit)
Keywords:	Vertex finding neutrino-nucleus interaction
Issue Date:	2022
Publisher:	IOP Publishing
Citation:	Journal of Instrumentation, 17(8), T08013.
Abstract:	We compare different neural network architectures for machine learning algorithms designed to identify the neutrino interaction vertex position in the MINERvA detector. The architectures developed and optimized by hand are compared with the architectures developed in an automated way using the package "Multi-node Evolutionary Neural Networks for Deep Learning" (MENNDL), developed at Oak Ridge National Laboratory. While the domain-expert hand-tuned network was the best performer, the differences were negligible and the auto-generated networks performed as well. There is always a trade-off between human, and computer resources for network optimization and this work suggests that automated optimization, assuming resources are available, provides a compelling way to save significant expert time.
Description:	Only IISER Mohali authors are available in the record.
URI:	https://doi.org/10.1088/1748-0221/17/08/T08013 (https://doi.org/10.1088/1748-0221/17/08/T08013) http://hdl.handle.net/123456789/4571 (http://hdl.handle.net/123456789/4571)
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