

## Convolutional LSTM models to estimate network traffic

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Network utilisation efficiency can, at least in principle, often be improved by dynamically re-configuring routing policies to better distribute on-going large data transfers. Unfortunately, the information necessary to decide on an appropriate reconfiguration—details of on-going and upcoming data transfers such as their source and destination and, most importantly, their volume and duration—is usually lacking. Fortunately, the increased use of scheduled transfer services, such as FTS, makes it possible to collect the necessary information. However, the mere detection and characterisation of larger transfers is not sufficient to predict with confidence the likelihood a network link will become overloaded. In this paper we present the use of LSTM-based models (CNN-LSTM and Conv-LSTM) to effectively estimate future network traffic and so provide a solid basis for formulating a sensible network configuration plan.

**Primary authors:** WACZYNSKA, Joanna (Wroclaw University of Science and Technology (PL)); MARTELLI, Edoardo (CERN); VALLECORSIA, Sofia (CERN); KARAVAKIS, Edward (CERN); CASS, Tony (CERN)

**Presenter:** WACZYNSKA, Joanna (Wroclaw University of Science and Technology (PL))

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