The Impact of Neural Networks on Language Technologies: a Case Study on Machine Translation

Josef Van Genabith
DFKI, Saarbrücken
Josef.Van_Genabith@dfki.de

Abstract

Deep Neural Nets (DNNs) are revolutionising many (if not most) areas in Artificial Intelligence, including Language Technologies (LTs), often with remarkable performance improvements. In this talk, I would like to take a closer look at why this is the case, focusing on Machine Translation (MT). I will contrast neural MT with previous approaches to MT. In doing so I will be drawing on research carried out in the QT21 H2020 research and innovation project (http://www.qt2.eu) and QT21 systems for the WMT-2015, -2016 and -2017 shared tasks. I will concentrate on morphologically complex languages with less constrained word order. I will also consider the more general impact of DNNs on processing pipelines, interoperability (as in system engineering) and end-to-end training for complex LT systems. I will outline potential benefits and end with a list of some of the currently open research questions.