# Silicon photonics neuromorphic computing for telecom applications

We are looking for highly motivated PhD candidates with a background in photonics and an interest in machine learning to do research into photonics reservoir computing, an exciting new paradigm of photonics information processing.

Reservoir computing is a methodology from the field of machine learning and neural networks, which has been used successfully in several pattern classification problems, like speech and image recognition. However, so far it has been mainly used in a software implementation, which limits its speed and power efficiency. Thanks to our recent work (Vandoorne et al., Nature Communications 5 3541, 2014) we have shown that silicon photonics could provide an excellent platform for such a hardware implementation.
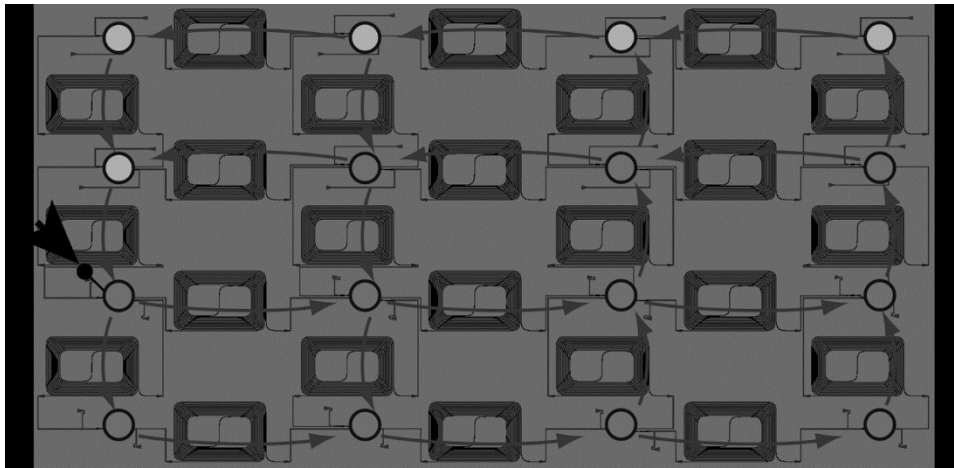
Recently, we have been building ever more complex systems, and expanding this approach to a variety of other applications, including telecom (non-linear dispersion compensation, …). In the context of the European ITN training network PostDigital, we are looking for motivated PhD students to help bring this research forward. The training network will also involve stays at other European labs.

We offer you the opportunity to perform cutting-edge, blue-sky research, in a challenging, motivating environment, working within a multidisciplinary team consisting of both photonics people and computer scientists. A willingness to tackle challenges coming from these multidisciplinary collaborations is a must.

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Submissions close on March 1st 2020.