<table>
<tr><th rowspan="2">cases</th><th>doc_1</th><th>doc_2</th><th>decision</th><th>id</th></tr>
<tr><td>
<table>
<tr><th>authors</th><td><ul><li>Xavier Lagorce</li><li>R. Benosman</li></ul></td></tr>
<tr><th>title</th><td>STICK: Spike Time Interval Computational Kernel, a Framework for General Purpose Computation Using Neurons, Precise Timing, Delays, and Synchrony</td></tr>
<tr><th>publication_date</th><td>2015-07-22 00:00:00</td></tr>
<tr><th>source</th><td>SupportedSources.SEMANTIC_SCHOLAR</td></tr>
<tr><th>journal</th><td>Neural Computation</td></tr>
<tr><th>volume</th><td>27</td></tr>
<tr><th>doi</th><td>10.1162/NECO_a_00783</td></tr>
<tr><th>urls</th><td><ul><li>https://www.semanticscholar.org/paper/1a0be4f0d7d8ea3db7bd79e190072a87321a1652</li></ul></td></tr>
<tr><th>id</th><td>id368572185479275467</td></tr>
<tr><th>abstract</th><td>There has been significant research over the past two decades in developing new platforms for spiking neural computation. Current neural computers are primarily developed to mimic biology. They use neural networks, which can be trained to perform specific tasks to mainly solve pattern recognition problems. These machines can do more than simulate biology; they allow us to rethink our current paradigm of computation. The ultimate goal is to develop brain-inspired general purpose computation architectures that can breach the current bottleneck introduced by the von Neumann architecture. This work proposes a new framework for such a machine. We show that the use of neuron-like units with precise timing representation, synaptic diversity, and temporal delays allows us to set a complete, scalable compact computation framework. The framework provides both linear and nonlinear operations, allowing us to represent and solve any function. We show usability in solving real use cases from simple differential equations to sets of nonlinear differential equations leading to chaotic attractors.</td></tr>
<tr><th>versions</th><td></td></tr>
</table>
</td><td>
<table>
<tr><th>authors</th><td><ul><li>Xavier Lagorce</li><li>Ryad Benosman</li></ul></td></tr>
<tr><th>title</th><td>STICK: Spike Time Interval Computational Kernel, A Framework for General Purpose Computation using Neurons, Precise Timing, Delays, and Synchrony</td></tr>
<tr><th>publication_date</th><td>2015-07-22 15:09:07+00:00</td></tr>
<tr><th>source</th><td>SupportedSources.ARXIV</td></tr>
<tr><th>journal</th><td>None</td></tr>
<tr><th>volume</th><td></td></tr>
<tr><th>doi</th><td></td></tr>
<tr><th>urls</th><td><ul><li>http://arxiv.org/pdf/1507.06222v1</li><li>http://arxiv.org/abs/1507.06222v1</li><li>http://arxiv.org/pdf/1507.06222v1</li></ul></td></tr>
<tr><th>id</th><td>id3433298201544357859</td></tr>
<tr><th>abstract</th><td>There has been significant research over the past two decades in developing new platforms for spiking neural computation. Current neural computers are primarily developed to mimick biology. They use neural networks which can be trained to perform specific tasks to mainly solve pattern recognition problems. These machines can do more than simulate biology, they allow us to re-think our current paradigm of computation. The ultimate goal is to develop brain inspired general purpose computation architectures that can breach the current bottleneck introduced by the Von Neumann architecture. This work proposes a new framework for such a machine. We show that the use of neuron like units with precise timing representation, synaptic diversity, and temporal delays allows us to set a complete, scalable compact computation framework. The presented framework provides both linear and non linear operations, allowing us to represent and solve any function. We show usability in solving real use cases from simple differential equations to sets of non-linear differential equations leading to chaotic attractors.</td></tr>
<tr><th>versions</th><td></td></tr>
</table>
</td><td>DUPLICATES</td><td>326</td></tr>
</table>