# Article information:

Agile: A Learning-Enabled Power and Performance-Efficient Network-on-Chip Design | IEEE Journals & Magazine | IEEE Xplore
<https://ieeexplore.ieee.org/abstract/document/9120367>

# Article summary:

1. The article proposes a new Network-on-Chip (NoC) design called Agile, which combines power-gating and dynamic voltage and frequency scaling (DVFS) to maximize power savings and improve performance.

2. The proposed design includes several architectural designs such as a bypass switch, reversible link channel buffers, and a reinforcement learning (RL) based control policy.

3. Simulation results show that the proposed design improves the overall power savings by up to 58 percent while improving the performance up to 11 percent as compared to state-of-the-art designs.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article is generally reliable in terms of its content, as it provides detailed information about the proposed NoC design, Agile, which combines power-gating and dynamic voltage and frequency scaling (DVFS). The authors provide evidence for their claims through full system simulation results using PARSEC benchmark suite. Furthermore, they explore the use of an artificial neural network (ANN) to reduce area overhead of implementing RL.

However, there are some potential biases in the article that should be noted. For example, the authors do not discuss any possible risks associated with their proposed design or any unexplored counterarguments that could be made against it. Additionally, they do not present both sides equally when discussing existing techniques for achieving power efficiency in NoCs; instead they focus mainly on their own proposed solution without providing sufficient comparison between different approaches. Finally, there is some promotional content in the article as it focuses solely on highlighting the advantages of Agile without exploring any potential drawbacks or limitations.

# Topics for further research:

* Power-gating NoC design
* Dynamic voltage and frequency scaling (DVFS)
* Artificial neural network (ANN)
* Power efficiency in NoCs
* Advantages and disadvantages of Agile
* Limitations of Agile NoC design

# Report location:

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