OPTIMISING LLS IN CNNs

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LLS in CNNs::

LLS: Local Learning Rule for Deep Neural Networks Inspired by Neural Activity Synchronisation
by Marco P. E., Apolinario, Arani Roy , Kaushik Roy

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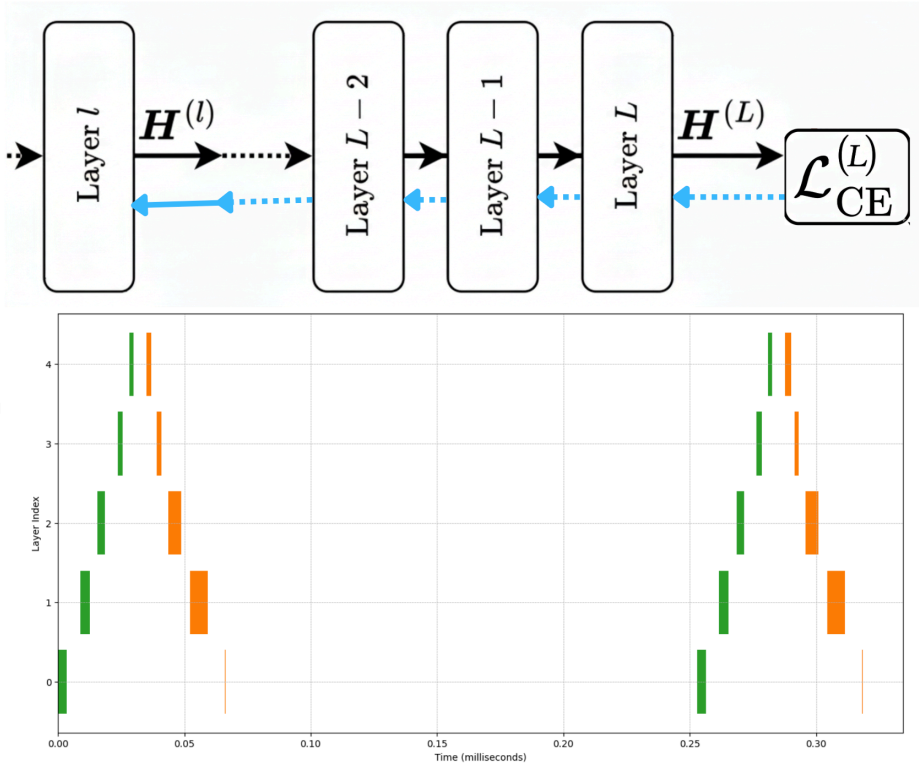
- Problem::
  In CNN's;
  BP: non-locality and update-locking



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- Solution::
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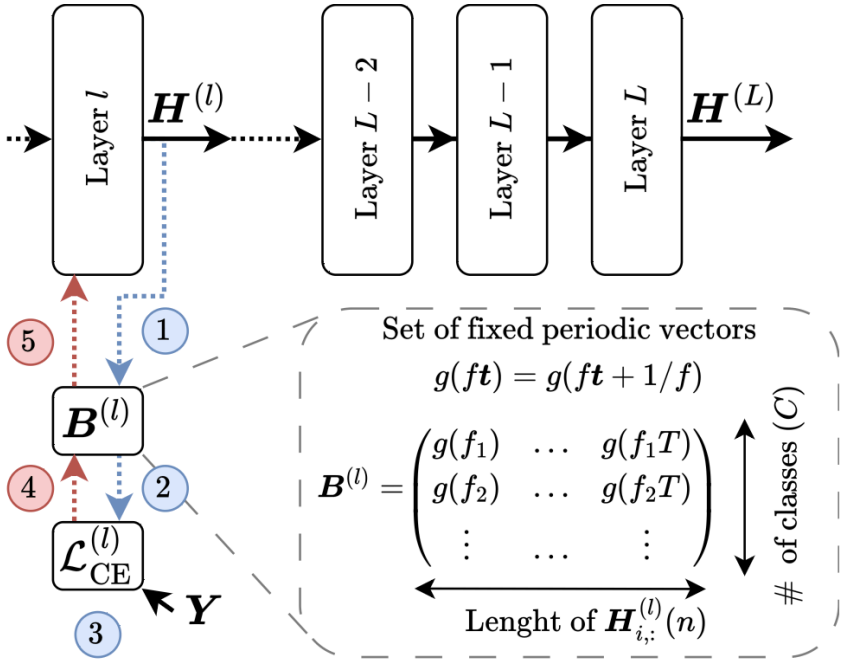

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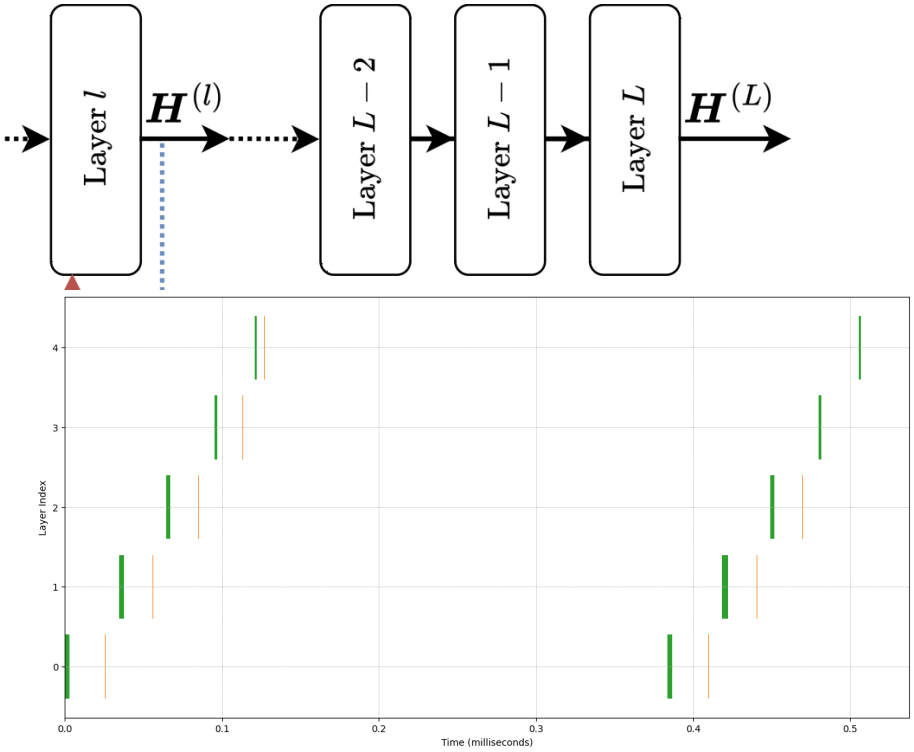
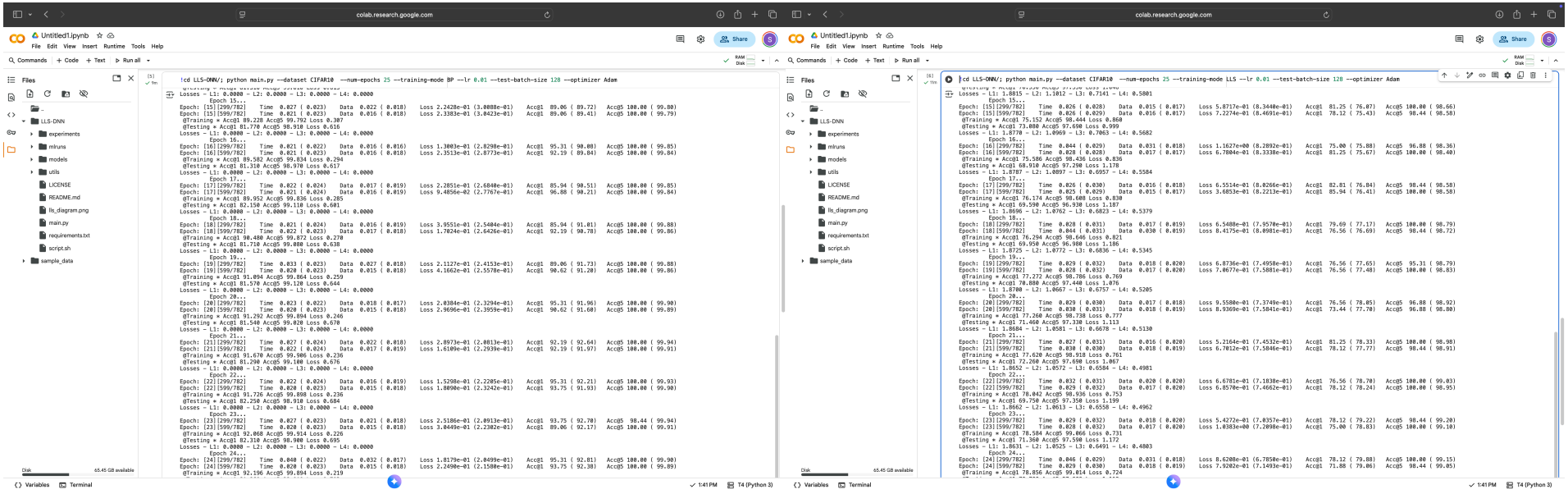


Evaluation::

On training:

- T = 9mins;
  —dataset CIFAR10 —num-epochs 25
  —training-mode BP ...
- T = 11mins;
  —dataset CIFAR10 —num-epochs 25
  —training-mode LLS ...



Goals::

Hierarchy

- CUDA implementation for the SmallConv (5-layer) LLS;
- CUDA implementation for the SmallConv (5-layer) LLS-M; LLS-MxM
- (CUDA implementation for the VGG8, MobileNet-V1 LLS;...)

- Generalising this approach to provide Parallel Local Learning Support using more generic framework via Triton for LLS; LLS-M; LLS-MxM; future-variants

Feedback:
Check feasibility of purple goal thoroughly to deliver that.

“Gratitude is not only the greatest of virtues, but the parent of all others”

MARCUS TULLIUS CICERO

“Thank you”,
TAs Ayush, Rahul:
timely help, believing in me.
Teachers Gopal, Karthik:
for this opportunity and teachings :)