Biologically inspired visual computing : the state of the art

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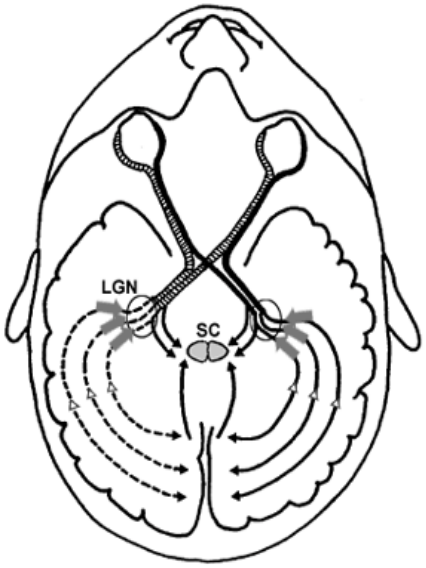
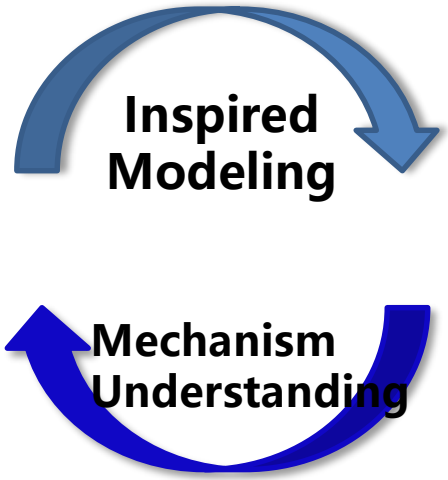
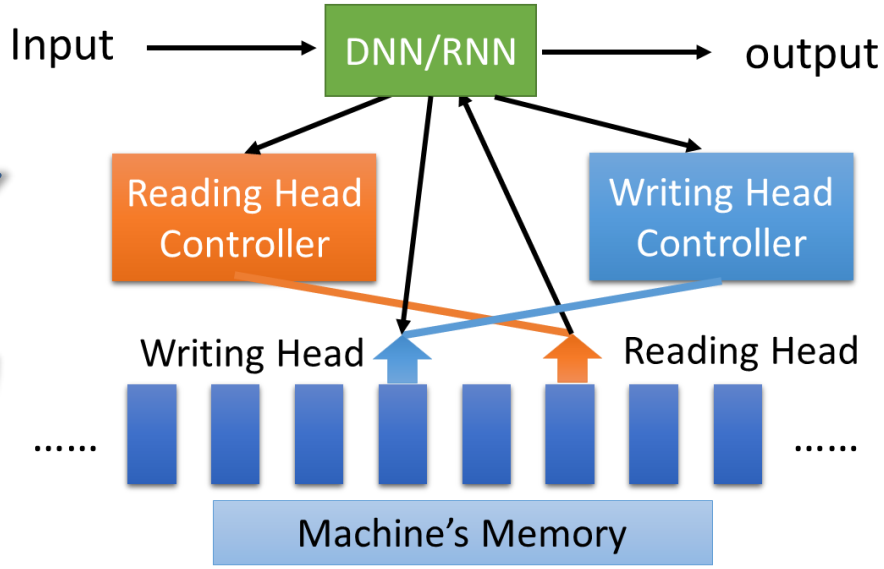
Insights

Review inspirations from the cognitive mechanism and learning mechanism of biological vision. Introduce the advanced achievements into neuroscience, cognitive science and psychology at multiple scales and levels. Show the superiority of the proposed method in a number of typical applications. Hopefully, we wish our endeavours will Promote researchers to design novel neural network architectures and improve the performance of visual computing.







Conclusions

- This paper presents a review about biologically inspired visual computing from four levels, including neuron, neuron circuit, functional and learning levels respectively.

- This paper gives some brief illustrations about our attempts in this field.

- Hopefully, we wish our endeavours will promote researchers to seek inspirations from the cognitive mechanism and learning mechanism of biological vision; introduce the advanced achievements of neuroscience, cognitive science and psychology into visual computing from multiple scales and levels; design novel neural network architectures and improve the performance of visual computing.