# Recent Advances in Neural Network Verification

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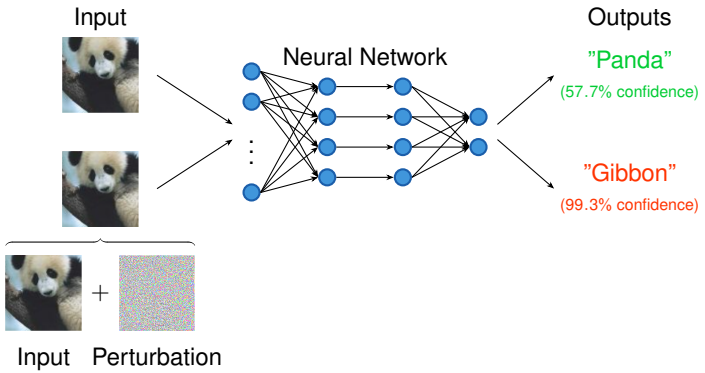
# Neural Networks and Adversarial Attacks

*Adversarial Attack:* Small carefully chosen input perturbation that leads to a misclassification[1].




To avoid unexpected behaviour, we have to verify neural networks!

[1] Goodfellow et al., "Explaining and Harnessing Adversarial Examples"

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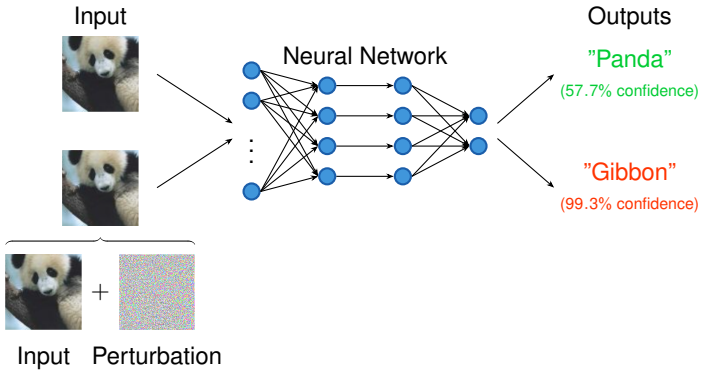


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# Neural Network Verification

**Your tasks:** Review and compare recent neural network verification approaches, e.g. [2], [3], [4], [5], [6].

**Interested? Contact me!**

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[2] Zhou et al., “Scalable Neural Network Verification with Branch-and-bound Inferred Cutting Planes”

[3] Lopez et al., “NNV 2.0: the neural network verification tool”

[4] Wu et al., “Marabou 2.0: a versatile formal analyzer of neural networks”

[5] Duong et al., “Harnessing neuron stability to improve dnn verification”

[6] Lemesle et al., “Neural Network Verification with PyRAT”