



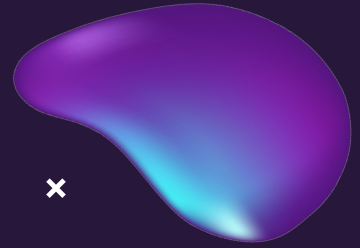
**Klasifikační
neuronová síť**

Praktický úvod do umělé inteligence

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Obsah



01 Co je AI?

02 Naše neuronová síť

03 Výsledky

x

AI obecně

Co je AI?

Jak se vyvíjí?

Jak se využívá?

x



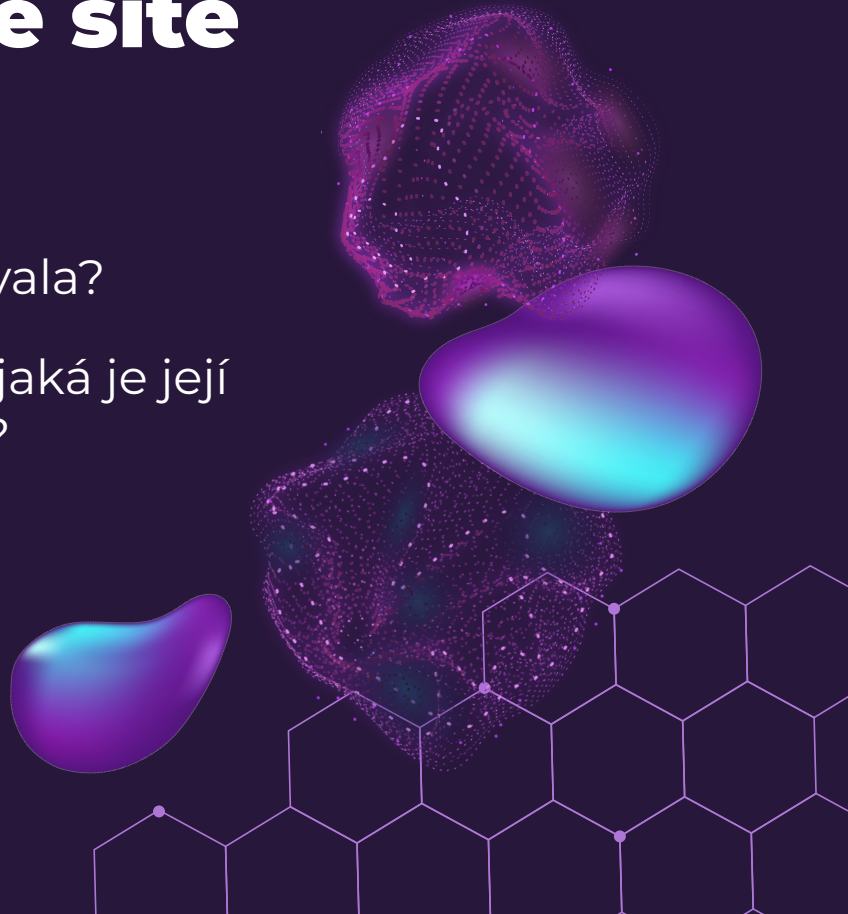
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Neuronové sítě

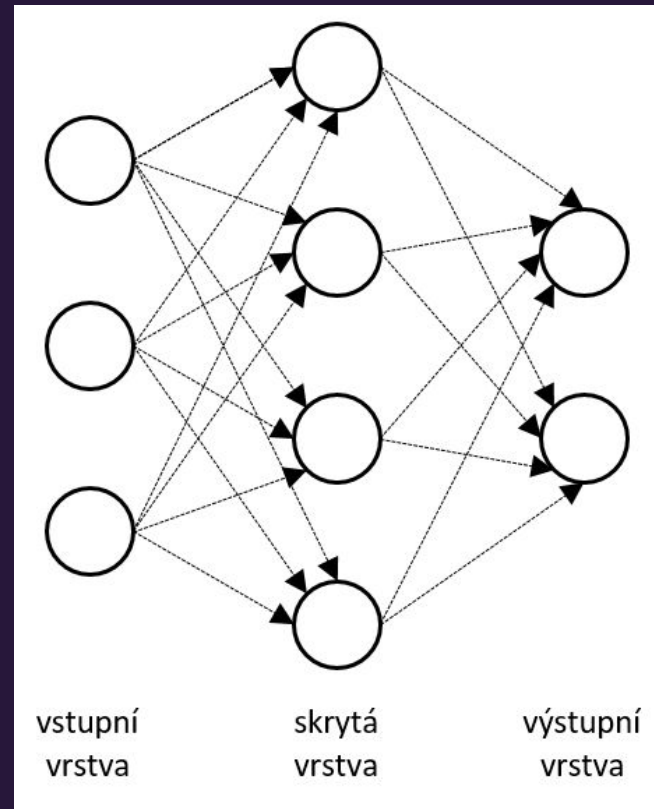
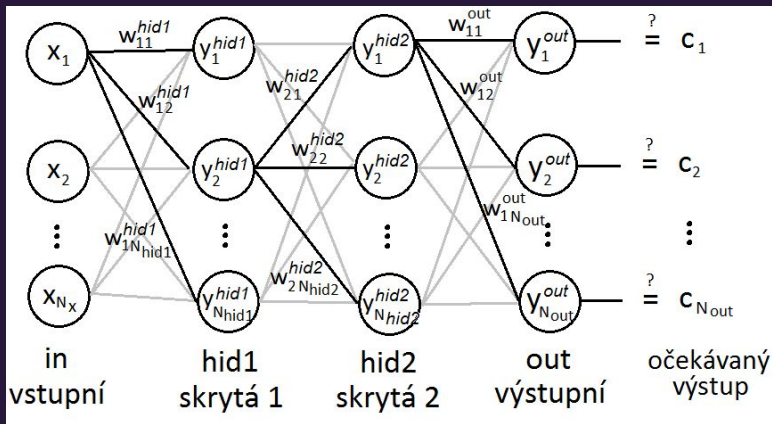
Čím se inspirovala?

Z čeho se skládá a jaká je její
struktura?

×



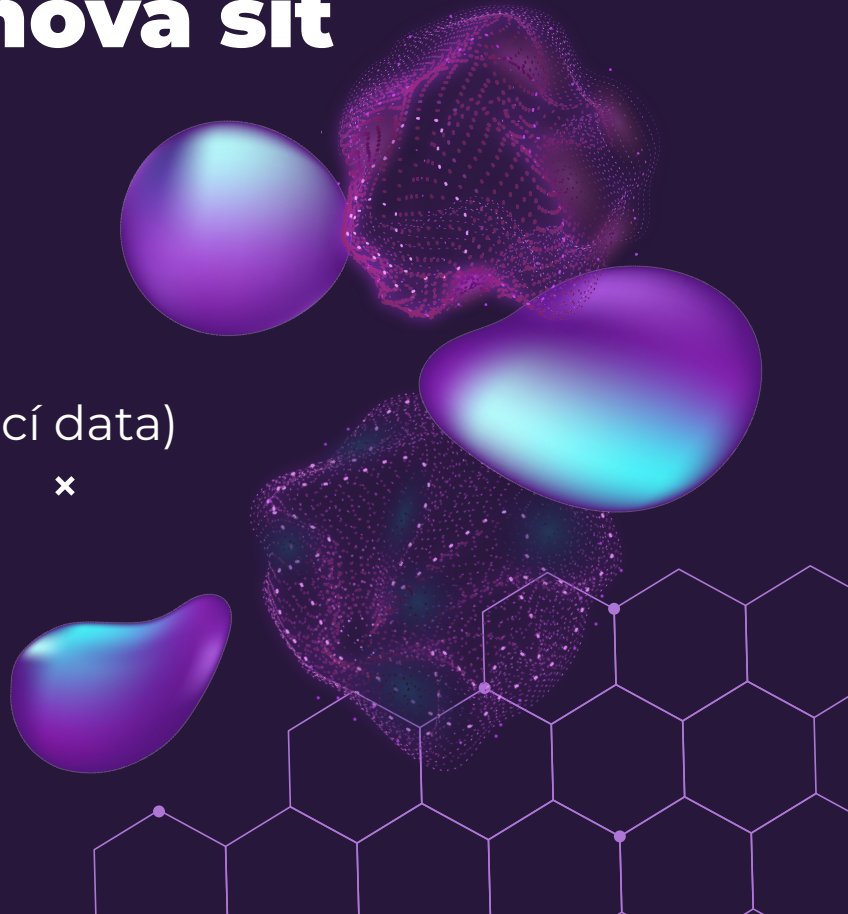


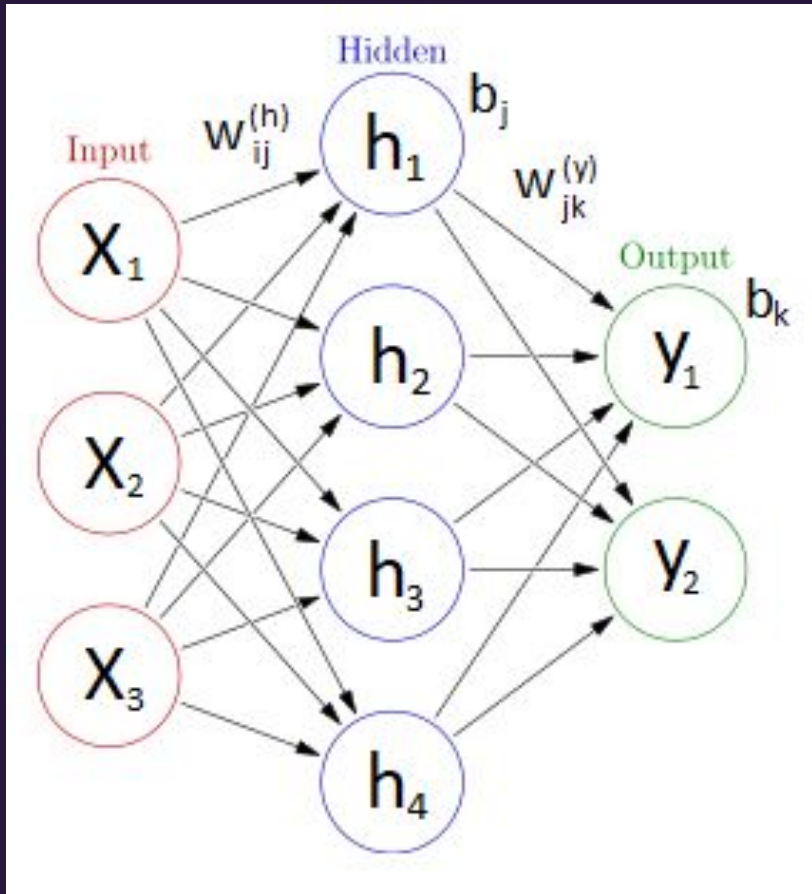


× Naše neuronová síť

- ◆ Model perceptron
- ◆ Tvorba neuronové sítě:
 - Matematická úprava
 - Trénování (trénovací a testovací data)
 - Úspěšnost

×

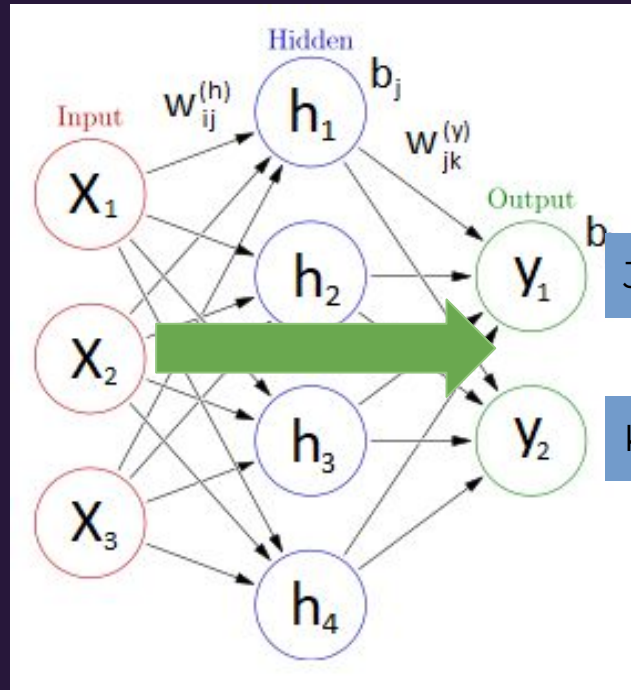




$$h_j = f \left(\sum_i w_{ij} x_i + b_j \right)$$

$$y_k = a \left(\sum_j w_{jk} y_j + b_k \right)$$

Forward pass

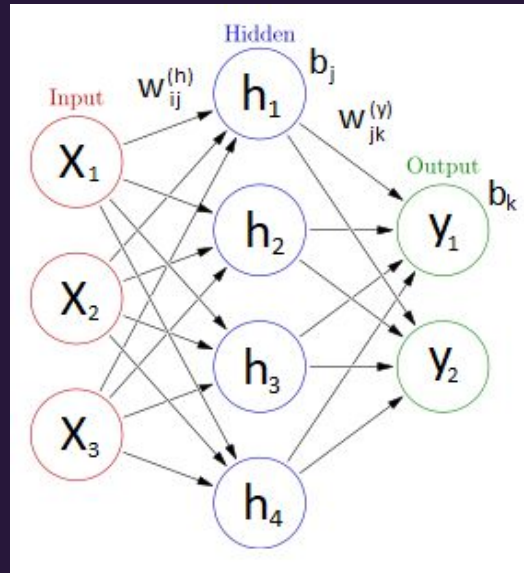


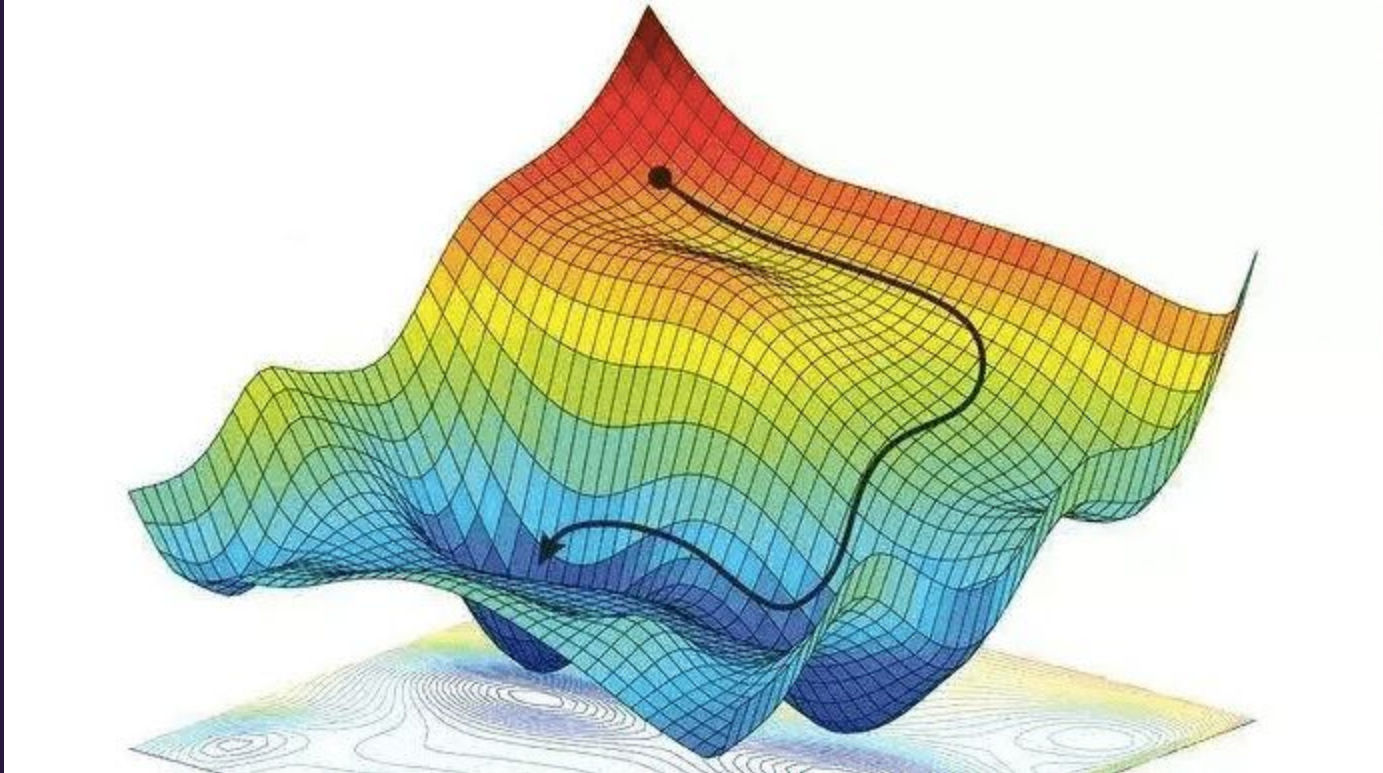
Jablko - 0.67

Koza - 0.33

Backward pass

Změna parametrů



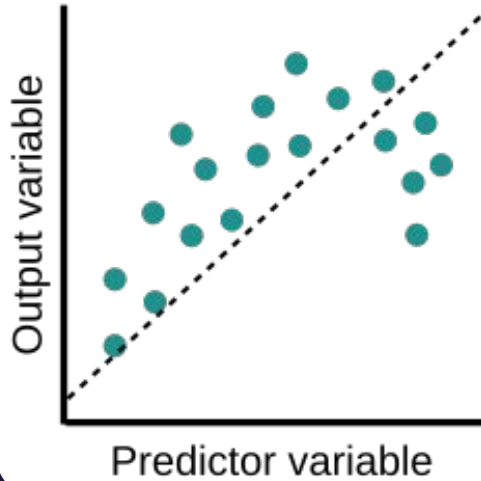


$$L(y_k, \hat{y}_k) = \frac{1}{N} \sum_{k=1}^N (y_k - \hat{y}_k)^2$$

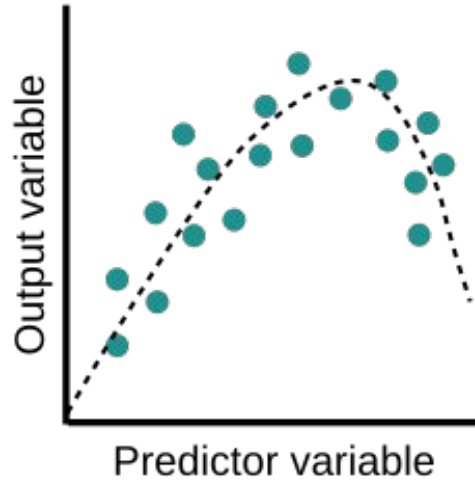
$$\vec{\Theta}' = \vec{\Theta} - \alpha \nabla_{\Theta} L$$

Underfitting a overfitting

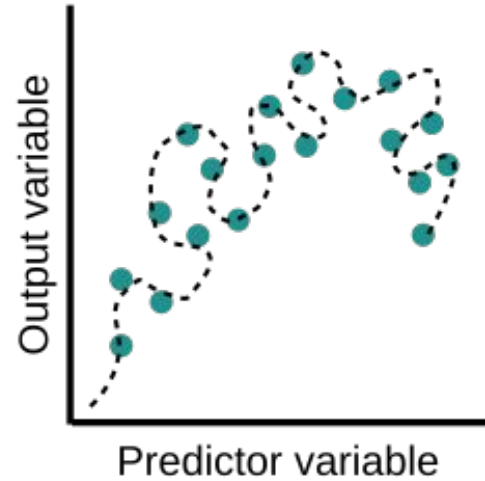
Underfit



Optimal

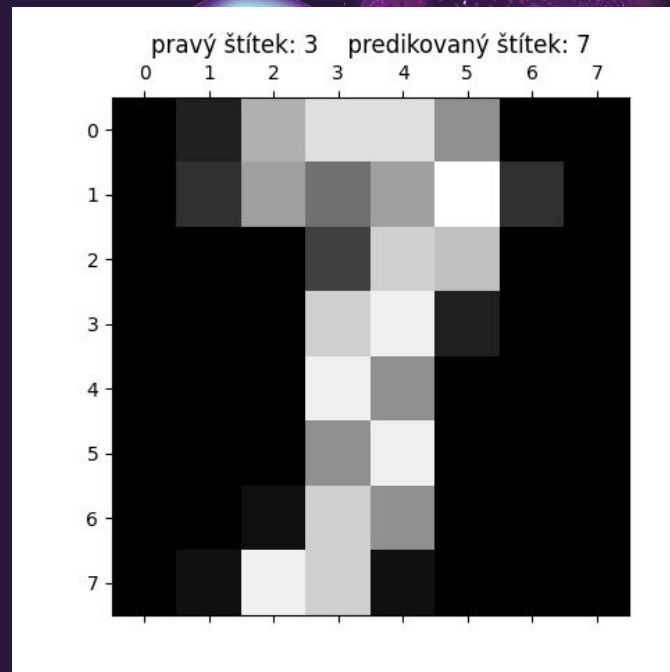
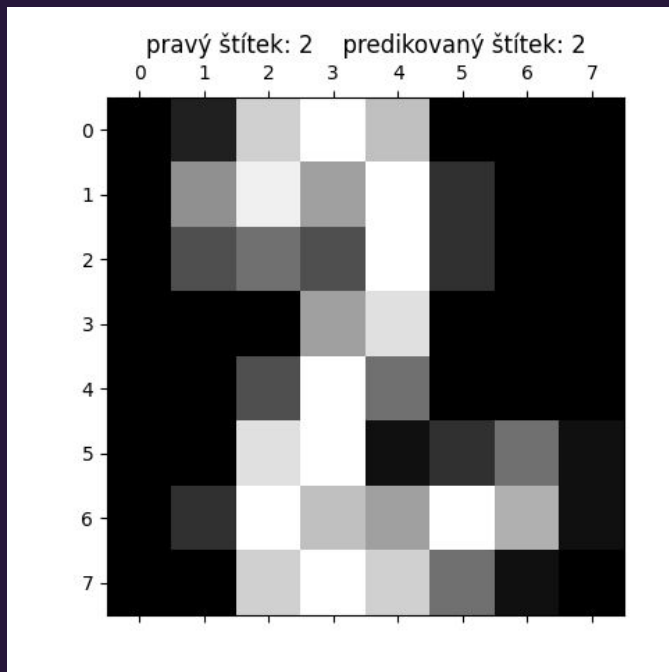


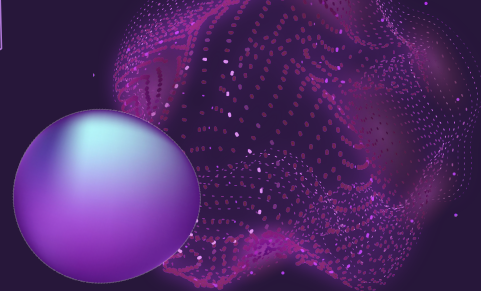
Overfit



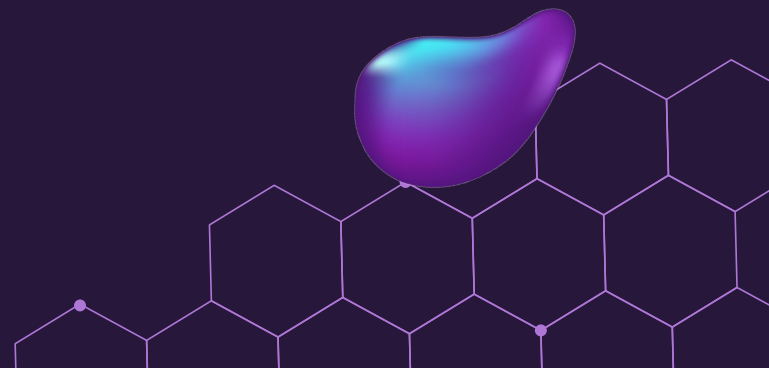
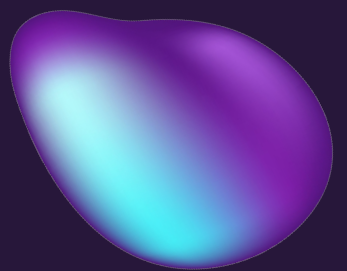
×

Výsledky





**Děkujeme za
pozornost**



Zdroje

- ◆ <https://www.fi.muni.cz/usr/jkucera/pv109/2000/xneudert.html>
- ◆ <https://www.nzip.cz/images/articles/1399-neurony-zakladni-stavebni-jednotky-ner-voveho-systemu/neurony-min.jpg>
- ◆ <https://i.info.cz/images/49/biologicky-inspirovane-5-6-orig.png>
- ◆ https://www.analyza-obrazu.cz/uploads/RTEmagicP_neuronova_sit_graficky.png
- ◆ <https://easyai.tech/wp-content/uploads/2019/01/tiduxiajiang-1.png>
- ◆ <https://play-lh.googleusercontent.com/8QnH9AhsRfhPott7REiFUXXJLRixi8KMAP0mFAZpYqd44OTOCtScwXeb5oPe1E4eP4oE>
- ◆ <https://jashrathod.github.io/assets/img/optimal-fit.png>

