KGŠM

# Ako súvisia matice s komprimovaním obrázkov

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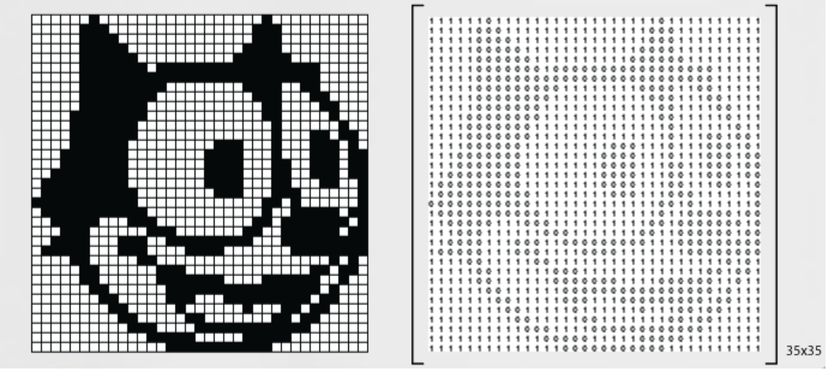
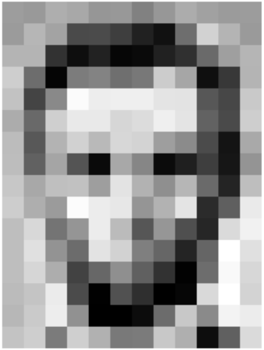
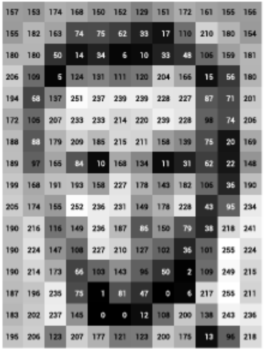
# Čo sú to matice

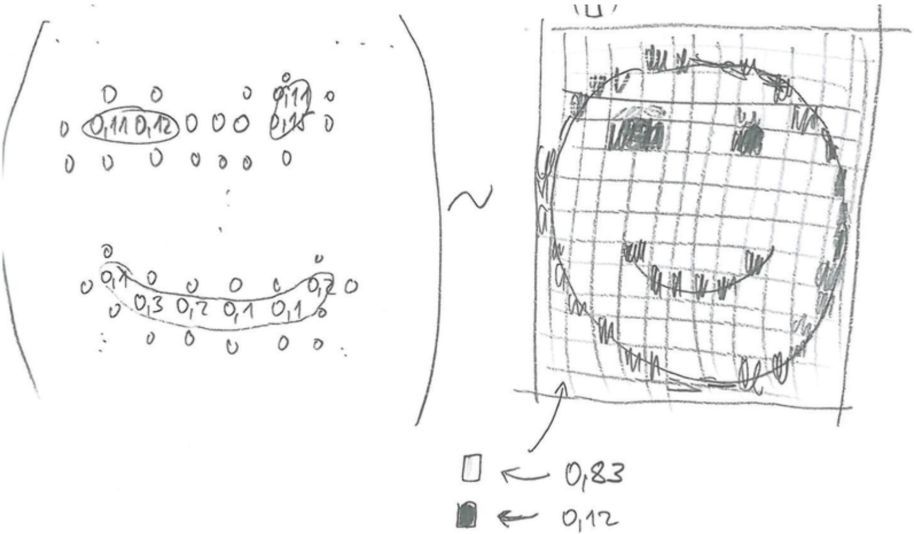
Matica = tabuľka čísel


35x35






| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 157 | 153 | 174 | 168 | 150 | 152 | 129 | 151 | 172 | 161 | 155 | 156 |
| 155 | 182 | 163 | 74 | 75 | 62 | 33 | 17 | 110 | 210 | 180 | 154 |
| 180 | 180 | 50 | 14 | 34 | 6 | 10 | 33 | 48 | 106 | 159 | 181 |
| 206 | 109 | 5 | 124 | 131 | 111 | 120 | 204 | 166 | 15 | 56 | 180 |
| 194 | 68 | 137 | 251 | 237 | 239 | 239 | 228 | 227 | 87 | 71 | 201 |
| 172 | 105 | 207 | 233 | 233 | 214 | 220 | 239 | 228 | 98 | 74 | 206 |
| 188 | 88 | 179 | 209 | 185 | 215 | 211 | 158 | 139 | 75 | 20 | 169 |
| 189 | 97 | 165 | 84 | 10 | 168 | 134 | 11 | 31 | 62 | 22 | 148 |
| 199 | 168 | 191 | 193 | 158 | 227 | 178 | 143 | 182 | 106 | 36 | 190 |
| 205 | 174 | 155 | 252 | 236 | 231 | 149 | 178 | 228 | 43 | 95 | 234 |
| 190 | 216 | 116 | 149 | 236 | 187 | 86 | 150 | 79 | 38 | 218 | 241 |
| 190 | 224 | 147 | 108 | 227 | 210 | 127 | 102 | 36 | 101 | 255 | 224 |
| 190 | 214 | 173 | 66 | 103 | 143 | 96 | 50 | 2 | 109 | 249 | 215 |
| 187 | 196 | 235 | 75 | 1 | 81 | 47 | 0 | 6 | 217 | 255 | 211 |
| 183 | 202 | 237 | 145 | 0 | 0 | 12 | 108 | 200 | 138 | 243 | 236 |
| 195 | 206 | 123 | 207 | 177 | 121 | 123 | 200 | 175 | 13 | 96 | 218 |

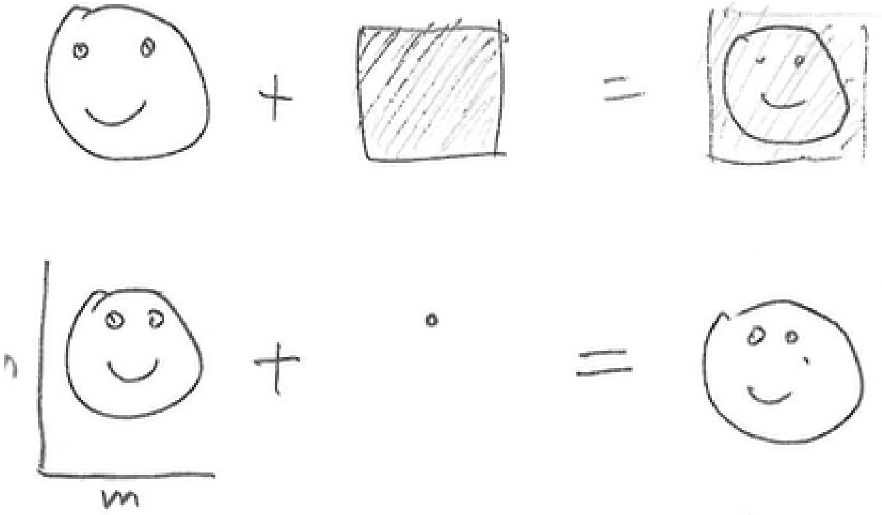

0,11 0,12
0,3 0,2 0,1 0,1
0,83
0,12

# Matice môžu byť

veľké, malé, úzke, široké

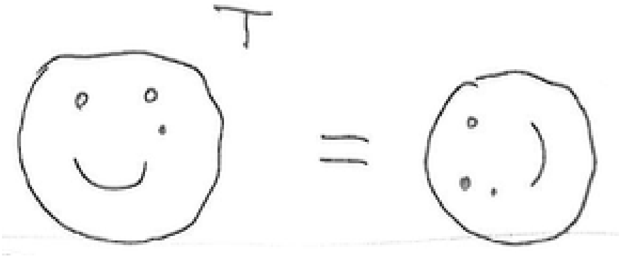
# Sčítanie matíc

Rovnako veľké matice môžeme sčítať alebo odčítať.



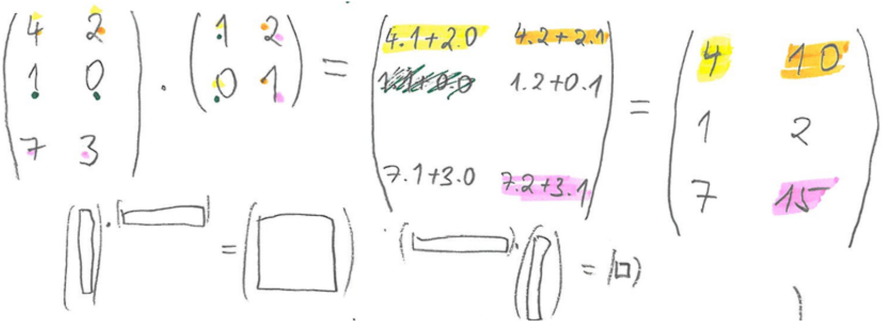
# Prevrátenie matice

Matice môžeme prevrátiť (transponovať).



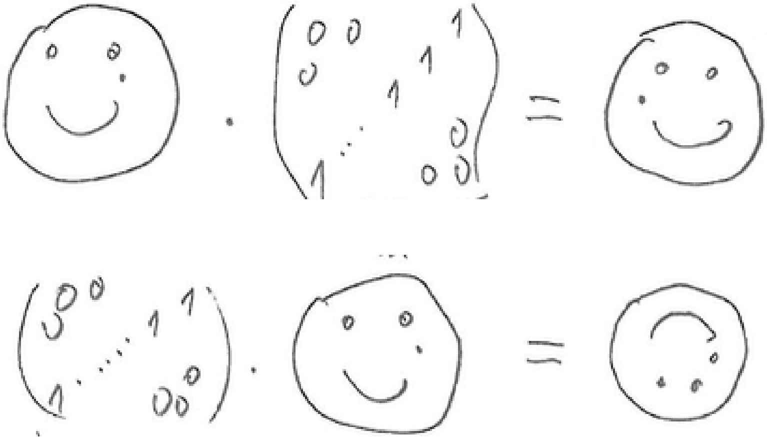
# Násobenie matíc

Niektoré matice môžeme medzi sebou násobiť.



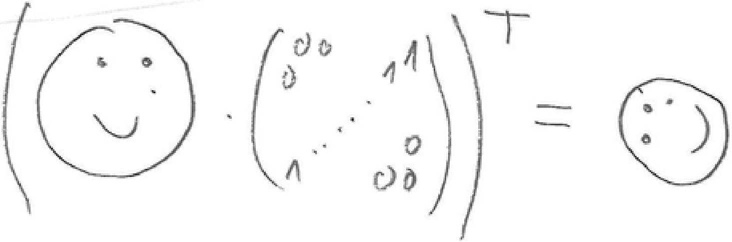
# Násobenie matíc

Násobenie matíc všeličo znamená.



# Maticové operácie

Maticové operácie môžeme skladať.

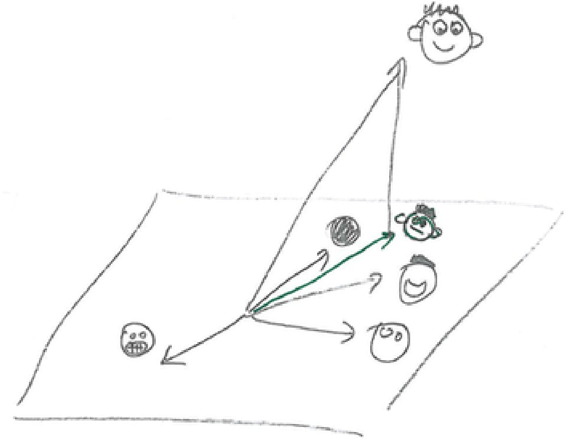


# Maticové operácie

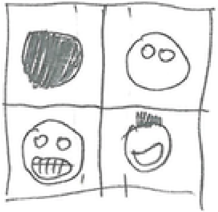
Maticové operácie môžeme skladať.


Matice môžeme merať.

Medzi maticami vieme merať vzdialenosti




= B0 + B1 ·



← bázické ksichtíky

# Tváre


Obr.: Zdroj: `https://github.com/gbuesing/pca/tree/master/examples`

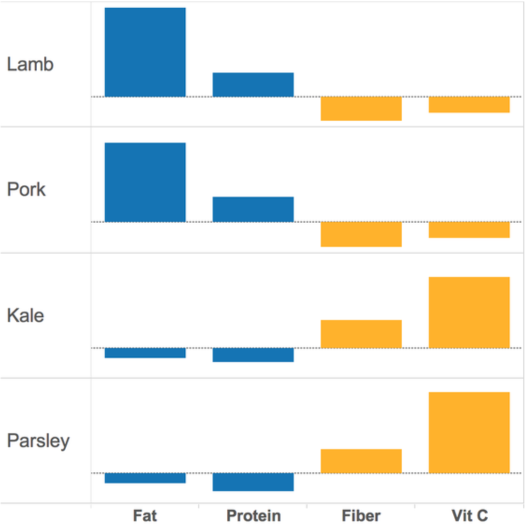
# Rekonštrukcia pomocou 36 hlavných komponentov

Obr.: Zdroj: `https://github.com/gbuesing/pca/tree/master/examples`

# 'Eigenfaces'

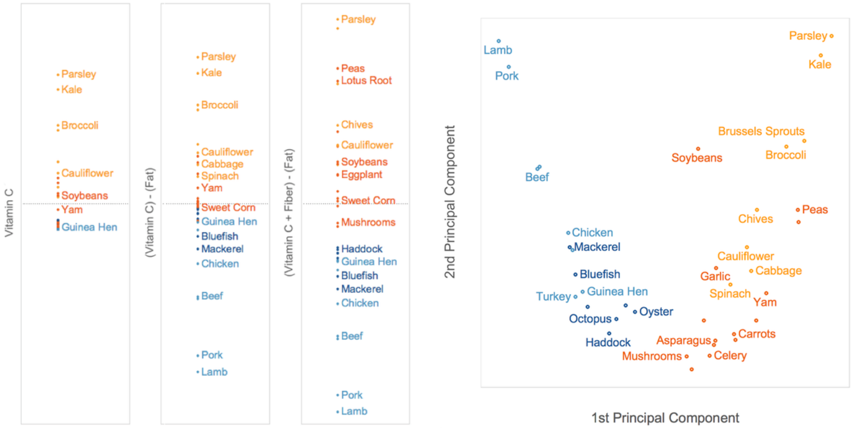
Obr.: Zdroj: `https://github.com/gbuesing/pca/tree/master/examples`

# Iný príklad



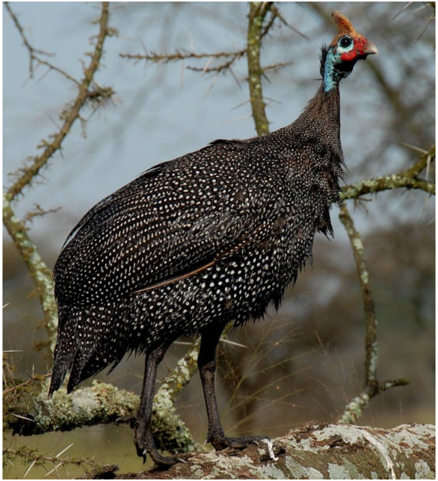

Obr.: Zdroj:

# Iný príklad



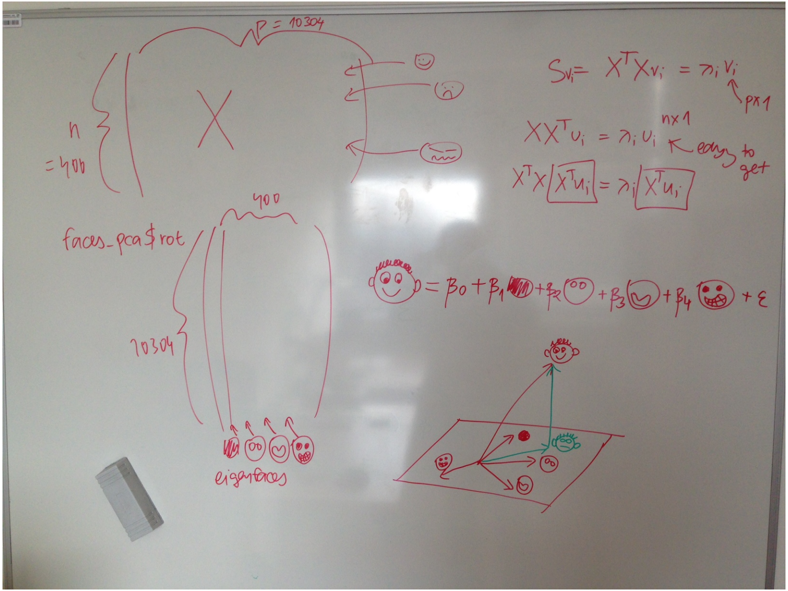

Obr.: Zdroj: `https://www.quora.com/What-is-an-intuitive-explanation-for-PCA`

# Guinea Hen



Obr.: Zdroj: `wiki`

# Ale teraz seriózne



Ďakujem za pozornosť.

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