

Greek text recognition by Neural Network

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Motivation

Missing Greek alphabet scanner application for mobile phones

What TODO?

- * **Prepare data = Greek (hand-drawn and typed) letters**
- * **Process pictures from DB**
- * **Train and create neural network plugin using Neuroph Studio**
- * **Recognize character**
- * **Evaluate results (f-score, confusion matrix, ...) and write documentation**

Dataset

* Set of classes, which contain set of pictures, where every picture contains one Greek character

*Training set:

Around 50 samples per each class

*Testing set:

10 character from each class

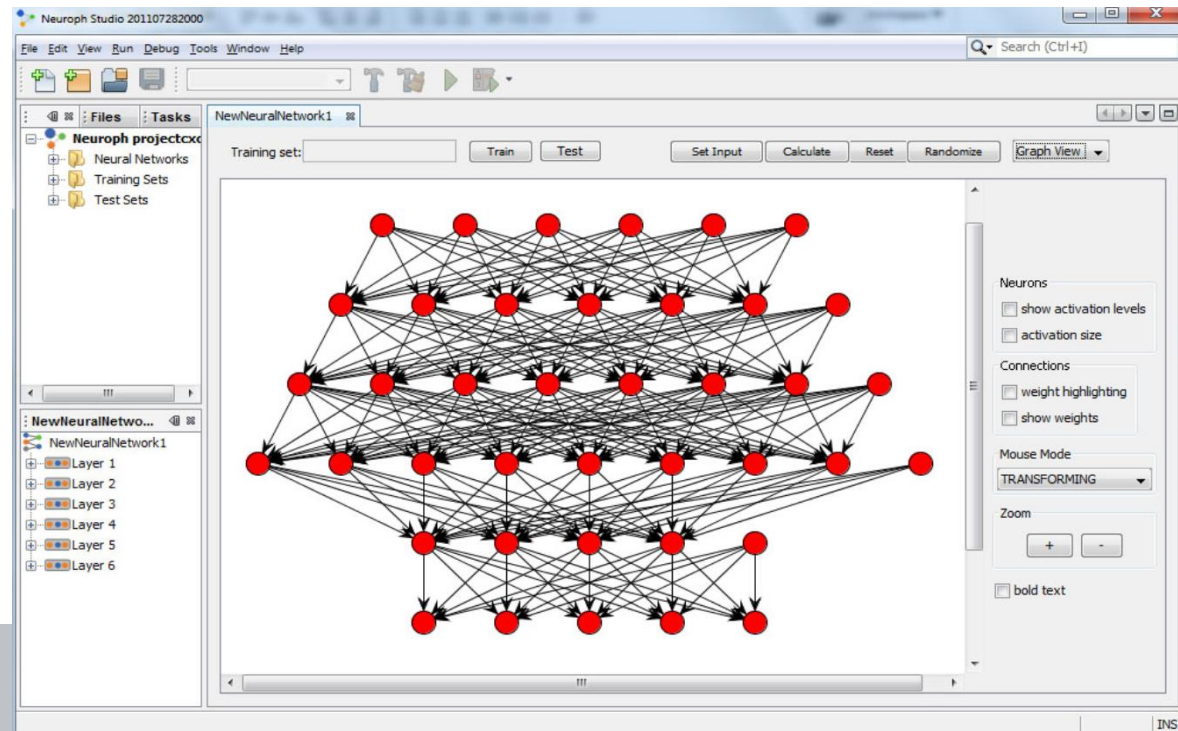
Α α	Α α	Ν ν	Ν ν
Β β	Β β	Ξ ξ	Ξ ξ
Γ γ	Γ γ	Ο ο	Ο ο
Δ δ	Δ δ	Π π	Π π
Ε ε	Ε ε	Ρ ρ	Ρ ρ
Ζ ζ	Ζ ζ	Σ σ ς	Σ σ ς
Η η	Η η	Τ τ	Τ τ
Θ θ	Θ θ	Υ υ	Υ υ
Ι ι	Ι ι	Φ φ	Φ φ
Κ κ	Κ κ	Χ χ	Χ χ
Λ λ	Λ λ	Ψ ψ	Ψ ψ
Μ μ	Μ μ	Ω ω	Ω ω

Process pictures

- * **Scaling pictures to smaller sizes for faster learning**
- * **Represent pictures in black and white colors, so we will need less neurons**

Neuroph Studio

- * Based on Java
- * Simplify the neural network development
- * Has nice GUI neural network editor, where you can adjust the neural network to your specific problem
- * Export neural network as plugin to Java application



Recognize character

- * **Java application will accept a photo with random character and it will be recognized**
- * **Future work:**
 - **Divide string to characters and recognize the whole sentence**
 - **Create Android application, which will use the camera**

Discussions

Questions?