# Product Vision

## Neronet

Project 2
Toolbox for managing the training
neural networks (Pyry Takala)

CSE-C2610 Software Project
Aalto University

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# Outline

Why

What

For whom

# Why – business view

Neural networks have become quite the hot topic when it comes to the machine learning research today. However, the tools available for most researchers for specifying, managing and queuing the neural network experiments are still stone-age. In particular, a good open source solution is still missing.

To satisfy the needs of deep learning researchers we have decided to develop an open source toolbox containing the most common necessities for managing the training of neural networks.

# Why – business view

Currently available state-of-the-art tools for deep learning
research aren't satisfactory (yet).
Researchers are burdened by practical difficulties like

- ▶ monitoring progress of ongoing experiments

- ▶ managing a queue of different experiments

- ▶ getting information about the computing environment

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# What – product goals

Functionalities

- ▶ Enabling users to use any of the most common frameworks for specifying their neural networks
- ▶ Enabling specifying of neural network experiments and managing a queue of experiments via an internet-based solution
- ▶ Enabling user login and setting of individual preferences
- ▶ Enabling users to see an overview of all previous experiments
- ▶ Enabling monitoring ongoing experiments by analysing the training log and parameter values as well as giving understandable visualisations of the networks

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# What – product goals

The product's goals are to enable easy

- ▶ specification of experiments in a framework agnostic way
- ▶ monitoring of ongoing experiments' logs and parameter values
- ▶ access to experiment data during and after the run
- ▶ configurable notifications on experiment state and progress
- ▶ configurable criteria for experiment autotermination
- ▶ management of experiment queues
- ▶ logging of experiment history
- ▶ visualisations from experiment data
- ▶ preferences configuration

Non functional requirements:

- ▶ low computational and memory overhead
- ▶ good usability
- ▶ easily maintainable and extensible

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# For whom – users

Users

- ▶ Deep learning researchers
- ▶ machine learning enthusiasts
- ▶ other people who run long lasting experiments