A CONVOLUTIONAL NEURAL NETWORK FOR THE MNIST DATASET USING TENSORFLOW

Project report

FABIO LOCHE - STEFANO TEDESCHI

Corso di Reti Neurali
Anno Accademico 2016/2017

Corso di Laurea Magistrale in Informatica
Scuola di Scienze della Natura
Università degli Studi di Torino

ABSTRACT

Qua scriveremo l'abstract...

We have seen that computer programming is an art,
because it applies accumulated knowledge to the world,
because it requires skill and ingenuity, and especially
because it produces objects of beauty.

— Donald E. Knuth (Knuth, 1974)

ACKNOWLEDGMENTS

Put your acknowledgments here.

Many thanks to everybody who already sent me a postcard!

Regarding the typography and other help, many thanks go to Marco Kuhlmann, Philipp Lehman, Lothar Schlesier, Jim Young, Lorenzo Pantieri and Enrico Gregorio[1], Jörg Sommer, Joachim Köstler, Daniel Gottschlag, Denis Aydin, Paride Legovini, Steffen Prochnow, Nicolas Repp, Hinrich Harms, Roland Winkler, Jörg Weber, Henri Menke, Claus Lahiri, Clemens Niederberger, Stefano Bragaglia, Jörn Hees, and the whole LaTeX-community for support, ideas and some great software.

Regarding LyX: The LyX port was intially done by *Nicholas Mariette* in March 2009 and continued by *Ivo Pletikosić* in 2011. Thank you very much for your work and for the contributions to the original style.

---

[1] Members of GuIT (Gruppo Italiano Utilizzatori di TeX e LaTeX)

CONTENTS

LIST OF FIGURES

LIST OF TABLES

LISTINGS

ACRONYMS

1

INTRODUCTION

2

CONVOLUTIONAL NEURAL NETWORKS

TENSORFLOW BASICS

REFERENCES

Knuth, D. E. (1974). "Computer Programming as an Art." In: *Communications of the ACM* 17.12, pp. 667–673 (cit. on p. iii).