Martin Thoma

Curriculum Vitæ

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Work Experience

2014

Student research assistant
developing neural nets for on-line handwriting recognition

My bachelors thesis includes getting on-line data of handwritten mathematical symbols, preprocessing, extracting features and using neural nets to classify those symbols. The data was collected with write-math.com. All results are available there, too.

2013

Software Developer
improving KIT lecture translator

I've implemented and integrated an unsupervised acoustic model training framework into KIT lecture translator system for automatic model adaption.

2013

Scientific lector
LATEX, German and computer science

I've corrected a script for computer engineering.

2012

Tutor for programming
teaching students programming at university

I taught people about 30 students how to program in Java. Coding conventions and basic OOP was part of the course. All of my German presentations are online.   → presentations

2011

Freelancer at KTC
programming for a consulting company

At KTC, I gained first experiences with buisness-logic and a big, but algorithmically not challenging project. To be honest, I only fixed some Java bugs.

2011

Student research assistant at Institute of Toxicology and Genetics, KIT
participating in a university research project

In summer 2011 I worked for over a month for a research project at KIT. I have written bash scripts for file conversions, fixed some bugs and re-written a slow Mathematica script in a much faster Python version. But it quickly turned out that this project had a lot of C++ source which was rarely commented or documented. I realized, that I wouldn't have time for this project after beginning my studies at university.

Education

from 2014	**Master of Science**
	Computer Science
	Karlsruhe Institute of Technology

2011 – 2014	**Bachelor of Science**
	Computer Science
	Karlsruhe Institute of Technology (KIT)
	Carnegie Mellon University (CMU)
	Thesis about **On-line Recognition of Handwritten Mathematical Symbols** (**Link**)

2004 – 2010	**Abitur**
	Intensive course physics and mathematics
	Paul-Klee-Gymnasium Gersthofen

Awards

2010	**Winner**
	Federal Competition for Computer Science

2009	**2nd prize - regional competition**
	Youth Research Competition

2008	**1st prize**
	data analysis competition at University of Augsburg

2007	**Prize for science and research**
	FOCUS pupils competition

Computer Skills

Basic Knowledge	JavaScript
	Linux, SQL, PHP
Intermediate Knowledge	LATEX, Java, HTML
Good Knowledge	Python

Language Skills

German	mother tongue
English	Cambridge Certificate – C1
French	DELF A2

Work Experience

since 2011

Freelance Work
building an online service

I have started to work as a freelancer at the beginning of 2011. I have developed an online-service which helped schools to coordinate their dates. I have sold this online service to two schools in bavaria and three other schools were interested. Unfortunately, the ministry of education of Bavaria released an application with similar functionality in 2012. This was the reason why I decided to shut down my service.

since 2006

HackIts, Puzzles and Challenges
ProjectEuler, bright-shadows.net and many more

I really love solving logical, algorithmical or math puzzles and participated in competitions. I started to solve puzzles in 2006 and I still like them. This was the reason why I participated in a practical curse at KIT for preparation for ICPC. It was fun, but I found out that many people are much faster in producing C++ code that passed the tests than I am. However, as I've been very successfull at the Federal Competition for Computer Science ("Bundeswettbewerb Informatik") it seems as if I'm better in problem solving if I get more time to think about it.

Future plans and motivation

The next step in my academic career is finishing the masters degree in computer science with a minor in mathematics.

Besides my studies, I have built a machine learning students group called *Machine Learning Karlsruhe* (ml-ka.de). In this group we organize regular „Paper Discussion Groups" in which we, talk about papers about convolutional networks. We want have regular talks about machine learning in general as well as practical sessions where we try to apply the algorithms.

Projects

02/2016	**A Survey of Semantic Segmentation** *writing a review paper about the work in the area* → read more
01/2016	**Creativity in Machine Learning** *a little project to help people understand my fascination about the topic* → read more
05/2015	**Semantic Segmentation with CNNs** *classifying street for self-driving cars*
11/2013	**Book about Geometry and Topology** *writing an introduction to geometry and topology* → read more
06/2013	**Interpolation** *creating an interactive HTML5/JS-example for interpolation* → read more
06/2012	**Matrix multiplication** *examining algorithms and libraries for matrix multiplication* → read more
09/2011	**Blogging on martin-thoma.com** *about Algorithms, the Web, University, ...*
06/2011	**Community Chess** *This is a platform for programmers. They can use the API to create A.I.s that play chess agains each other.* → read more

Online Courses

09/2013	**Artificial Intelligence for Robotics** *finished 10/2013*	Udacity
06/2013	**Introduction to Artificial Intelligence** *finished 08/2013*	Udacity
05/2012	**Algorithms I** *finished 07/2012*	Stanford
06/2010	**Introduction to Computer Science and Programming** *finished 09/2010*	MIT

Profiles

StackExchange	careers.stackoverflow.com/thoma
arXiv	arxiv.org/a/thoma_m_1
LinkedIn	linkedin.com/in/themoosemind