ONNO EBERHARD

Electrical Engineering Student

University of Duisburg-Essen, Siemens AG

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onnoeberhard.com
 in onnoeberhard

EDUCATION

B.Sc.
2016 – 2020
Electrical Engineering and Information Technology, *University of Duisburg-Essen.*
In addition to the 180 ECTS credit points from the degree, I am taking >80 credit points worth of Computer Science and Mathematics courses. I am doing this degree as part of a dual study program with Siemens (part time work / study).
Expected GPA: 1.2 – 1.6 (1.0 is the best)

2018
Exchange Semester, *Nanyang Technological University Singapore.*
School of Electrical and Electronic Engineering, School of Computer Science and Engineering

2008 – 2016
Secondary School, *Georg-Büchner-Gymnasium Seelze*, Hanover.
Abitur with a GPA of 1.3 (1.0 is the best). *Valedictorian in Maths, English and Physics.*

EXPERIENCE

UDE
2019 –
Physics Lab Supervisor
I help the students with the experiments and correct their lab reports.
University of Duisburg-Essen

Siemens
2017 –
Working Student (Machine Learning)
I work in the research and development department for steam turbine design, where my work primarily consists of using Python for signal analysis and machine learning applications.
Siemens AG, Mülheim an der Ruhr

Siemens
2016 – 2019
Electronics Technician Apprentice
IHK Apprenticeship as Electronics Technician for Machines and Drive Technology.
Successful completion with IHK diploma in 2019.
Siemens AG, Mülheim an der Ruhr

Audi
07/2015
Engineering Intern
Engineering-oriented internship with a focus on technical development and quality management in the car industry.
Audi AG, Ingolstadt

Continental
01/2014
Engineering Intern
Internship in the machine development department with a focus on electrical engineering and computer science.
Continental AG, Hanover

AWARDS & SCHOLARSHIPS

UDE
2018
Awarded the *PROMOS* scholarship by the University of Duisburg-Essen and the German Academic Exchange Service (DAAD) to help finance one semester in Singapore.

UDE
2017
Awarded the *Deutschlandstipendium* scholarship by the University of Duisburg-Essen for excellent academic achievements.

RoboCup Federation
2012, 2014
Second place at the RoboCup World Cup 2012 in Mexico City in the League *Rescue A Primary*, Fourth place at the RoboCup World Cup 2014 in João Pessoa in the League *Rescue A Secondary* (Superteam Competition).
I also competed at the RoboCup German Open in the years 2010 – 2014 with good results.

VOLUNTEER WORK

RoboCup Federation
2019 –
I work as a volunteer at RoboCup Junior events. So far, I have worked at the RoboCup German Open 2019 in Magdeburg and at the RoboCup Junior Euro 2019 in Hanover, both times acting as referee, supervisor and general volunteer.

CampusFM
2017 –
I work at my university's student radio station as an editor. I also help develop and maintain our website and act as a represetative at events.
CampusFM e.V., Essen

SELECTED PROJECTS

More of my personal projects can be seen at `https://blog.onnoeberhard.com/projects`.

Fibonacci
2018
The first project I published on my blog. I wanted to find out how plants are able to arrange their seeds and leaves, as they famously do, in their distinct Fibonacci patterns. I experimented using math and Python and documented the process in this article. *blog.onnoeberhard.com/2018/12/16/fibonacci*

ePotato
2016 – 2017
This is an instant messenger app, originally intended as a silly joke. It got out of control and ended up being a massive project. I built native apps for Android and iOS with Java and Swift respectively. I used Google App Engine with Cloud Endpoints and Cloud Datastore as a backend. I also used endless libraries like Firebase Cloud Messaging for communication, Twilio for SMS authentication and CryptLib for end-to-end AES encryption. Some of the libraries, like SQLite.swift I had to modify to fit my needs. All in all I wrote about 20000 lines of Java, Swift and other code for the project. *onnoeberhard.com/ePotato*

6Ω of Separation
2017
I was fascinated by social networks and built a program with Python to analyze the ($\sim$50 users large) network of ePotato users. I also built a website where a user can enter their ePotato-username and see their degrees of separation and "resistance distance" to other users. This was my first scientific project and first experience with Jupyter Notebooks. For the website I used Python with Jinja2 as a backend running on the Google App Engine. *onnoeberhard.com/kevinBacon*

Tau
2016 – 2017
I built a chain of lights where the individual lights can be controlled over the internet. It also doubles as a binary clock and stopwatch. I used Python fodfsr controlling the custom circuit board with a Raspberry Pi, PHP and MySQL for the backend and Javascript for the frontend. *onnoeberhard.com/tau*

TECHNICAL SKILLS

Machine Learning
I began teaching myself the basics of machine learning in 2017. By now, I have completed four online courses: Machine Learning on Coursera, Machine Learning A-Z on Udemy, Deep Learning A-Z on Udemy and a course on deep learning with PyTorch on Udacity (Certificates). I have also read all of the following books: *Learning from Data* by Yaser Abu-Mostafa, *Hands-On Machine Learning with Scikit-Learn and Tensorflow* by Aurélien Géron, *Deep Learning with Python* by Francois Chollet and *Deep Learning* by Ian Goodfellow.
Additionally I gained experience in using machine learning libraries for Python while working for Siemens, where I built a system predicting the start up behaviour of steam turbines depending on atmospherical data. The only personal project using machine learning that I have published is my attempt at the Kaggle "TrackML" challenge (Link).

Python
Python is the language I am most comfortable with. I've used it for many projects, both personal and professional. To learn the language I worked thoroughly through the books *A Primer on Scientific Programming with Python* by Hans Petter Langtangen and *Effective Computation in Physics* by Anthony Scopatz.
I am very comfortable with the scientific Python stack, including NumPy, Pandas, Matplotlib, SciPy, SymPy, Scikit-Learn, Tensorflow and Keras. I have contributed to the open source library Pandas.

Java
Java is the language I have the most experience with. I started using it when I was 9 and it was my main language for 10 years. I wrote many Android apps using Java and had one advanced programming course at university using the language.

C, C++, MATLAB
I had seperate courses on each of the languages C, C++ and MATLAB at university and have used all three for personal projects. I am not as experienced with the languages as I am with Python or Java.

LANGUAGE SKILLS

German	Native	**Dutch**	Elementary (self-taught)
English	Fluent	**Latin**	Elementary (kl. Latinum certificate)
French	Elementary (4 years at school)	**Mandarin Chinese**	Elementary (HSK2 certificate)