Farooq Ahmed Zuberi

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Email: farooqahmedzuberi@gmail.com
Burckhardt-Str. 71, 70374, Stuttgart
Website: https://farooqzuberi.github.io/
DOB: 1st December 1990

Objective

Specialized Master's degree in cognitive technical systems and expertise in advanced topics of Machine Learning and Artificial Intelligence. Seeking a position in research and development where I can apply and polish my problem solving skills for challenging tasks in robotics and autonomous driving domain.

Technical skills

Programming Languages

- Proficient in: C/C++, Java, Python, Matlab
- Familiar with: Lua, R, Bash, C#, PHP, SQL JavaScript

Machine Learning

- Hands-on practical experience with Caffe, Torch 7 for Deep Learning
- Familiar with Tensor Flow, Keras, Theano, Lasagne and Pytorch.
- Working experience with Mallet, R, Rapid Miner, Weka, SPSS, Scikit-learn (Numpy / Scipy) as well.

Robotics and Computer Vision

- OpenCV
- Robotics Operating System (ROS)
- Automotive Data and Time-Triggered Framework (ADTF)

Others

- Source Control: Git, SVN.
- Platforms: Microsoft Windows and Linux.
- Documentation in Latex, MS Office.
- Familiar with AWS, CUDA, Map-Reduce, NoSQL databases, Docker, Android SDK, OpenGl and Web development.

Experience

April 2017 – current

Machine Learning Software Engineer
Technology and Strategy Engineering
Project: Robert Bosch GmbH – *Stuttgart Region, Germany*
Chassis Control – Driver Assistance (CC-DA)

Jul 2016 – Dec 2016

Master Thesis Student
Robert Bosch GmbH
Corporate Research – *Renningen, Germany*
Driver Assistance and Automatic Driving and Bosch Center for Artificial Intelligence
Topic: Semantic Segmentation for 3D Point Clouds using Deep Learning

Jan 2015 – May 2016

Research Assistant (HiWi)
Automated Algorithm Design chaired by Dr. Frank Hutter &
Computer Vision Group chaired by Prof. Thomas Brox
Albert Ludwig University of Freiburg – *Freiburg im Breisgau*, *Germany*

Jul 2013 – Sep 2014

Software Engineer
Creative Chaos (Pvt.) Limited
Karachi , *Pakistan*

Education

Oct 2014 - Mar 2017

Masters of Science (MS) in Computer Science
Albert Ludwig University of Freiburg, *Freiburg im Breisgau, Germany.*
Major: Cognitive Technical Systems
CGPA – 1.4 out of 5 with 1.0 being the highest grade
Thesis: CloudSeg: Semantic Segmentation for 3D Point Clouds using Deep Learning
Grade of thesis: 1.5 out of 5 with 1.0 being the highest grade

Aug 2009 -May 2013

Bachelors of Science (BS) in Computer Science
FAST National University, *Karachi, Pakistan.*
CGPA – 3.14 out of 4 with 4.0 being the highest grade
Thesis: ClickSafe: Mitigation and Prevention from Clickjacking
Grade of thesis: 3.8 out of 4 with 4.0 being the highest grade

Research and Publications

- **CloudSeg: Semantic Segmentation for 3D Point Clouds using Deep Learning**
  - This thesis performs LIDAR perception task for autonomous driving, learning directly from raw data in order overcome the classical ML pipeline.
  - CloudSeg, a novel CNN architecture, is designed and trained on LIDAR data recorded in urban environment, to perform end-to-end semantic 3D point cloud segmentation.
  - CloudSeg evaluated point clouds from LIDAR to 11 distinct classes for semantic scene understanding. Qualitative and quantitative analysis of CloudSeg performance with 2D and 3D visualizations is also presented.
- **ClickSafe/Mitigation and Prevention from Clickjacking**, 15th IEEE International Symposium on High Assurance Systems Engineering, 2014, Miami, Florida, USA.
- **Dynamic Gesture Recognition using Machine Learning Techniques and factor affecting its accuracies**, 6th International Conference on Innovative Computing Technology (INTECH), 2016, Islamabad, PK

Projects and Courses

- **Audi Autonomous Driving Cup 2016 (AADC 2016)**
  - Autonomous Driving Challenge for development of automatic driving function.
  - Implemented and designed Automated Driving Lifecycle comprising different modules in ADTF using C++.
  - Development of integration module along with lane keeping, emergency braking, crossroad detection modules.
  - Secured 5th position among the top German Engineering Universities.
- **Advance Machine Learning Lab with Prof. Martin Riedmiller – Deep Learning**
  Hands on Practical Experience of Neural Networks in LUA and Convolutional Neural Networks in Torch 7 for MNIST Dataset and object detection/classification tasks.
- **Courses – Master's Degree:**
  - Foundation of Artificial Intelligence
  - Statistical Pattern Recognition
  - Artificial Intelligence Planning
  - Human Oriented Robotics
  - System Infrastructure in Data Science
  - Mobile Robotics
  - Machine Learning
  - Computational Neuroscience
- **Seminars:**
  Advance AI Planning, Social Robotics, Machine Learning and Computational Neuroscience.

coursera	• **Coursera Certifications** : **Machine Learning, Introduction to Data Science, R Programming, Cleaning Data**
FAST	• **Courses - Bachelor's Degree:** • Machine Learning • Computer Graphics • Data warehousing • Concurrent and Distributed Systems • Mobile Computing • Information Processing Techniques

References will be furnished upon request.

Dear Madam/Sir,

Please accept the enclosed resume as my application for Bosch Career Event. I hold a Master's degree in Computer Science, majoring in Cognitive Technical Systems with a CGPA of 1.4, from University of Freiburg and currently working as a Software Engineer in Automotive Industry. I am applying because I believe my background in machine learning and computer vision, expertise in software development and experience in automotive industry would be a good fit for your company while being an interesting career advancement opportunity for me.

As stated in my enclosed resume, I have more than 2 years of work experience as a professional software engineer. I am proficient in C++, Java, MATLAB and Python and have contributed to various industrial-grade as well as open source projects with my problem solving skills, encompassing applications across various domains, including machine learning frameworks, web, mobile, network, and computer graphics applications. Since the past two years I have been involved in the development of various projects in automotive industry, specifically related to driver assistance systems and automated driving. During this period I have gained valuable experience of working on perception tasks with Camera, Radar and Lidar sensors for driver assistance and automated driving function and gain hands-on experience with Robot Operating System (ROS), Automotive Data and Time-Triggered Framework (ADTF), OpenCV etc.

In the last 5 years, I have developed extensive theoretical and practical expertise and background of Artificial Intelligence and Machine Learning. My coursework at University of Freiburg revolves around Machine Learning, Artificial Intelligence and their applications in Robotics and Computer Vision. I am experienced with caffe, tensorflow and torch 7 and scikit-learn machine learning frameworks. Moreover, I am well-versed in many topics of robotics and AI, including localization, mapping, SLAM, motion planning, action planning etc.

Having worked in T&S engineering for about a year, I feel I am ready for more challenging position which will allow me to utilize my problem solving skills for algorithm development and engineering solutions. A position at Bosch would enable me to polish my technical skills by taking part in more challenging and diverse tasks with more responsibility to produce quality and innovative technical solutions. It will enable me to collaborate and learn from experienced peers to excel and gain competent experience as an engineer.

I set high standards for me in terms of quality of work to achieving the goal and I never shy away from taking up a challenge. Bosch being the industry leader, expects excellence from its employees, which is often reflected by a PhD degree. Despite not having a PhD degree, I believe I possess most of the skills acquired during a PhD degree, including publishing research work, keeping up and conducting research, contributing to open source projects, presenting and defending your work among the community.

Concluding, I am confident that my skill set and experience would be interesting addition for the Bosch family. Thank you for taking time to review this application. I look forward to further correspondence.

Best regards,
Farooq Ahmed Zuberi
Email: farooqahmedzuberi@gmail.com
Website: https://farooqzuberi.github.io/
Tell: +4915216255435 / +4917685238383

Degree certificate

Albert-Ludwigs-Universität Freiburg

UNI FREIBURG

Technische Fakultät

Farooq Ahmed Zuberi

born on December 1, 1990

completed the degree program

Master of Science (M. Sc.)

in

Computer Science

on April 4, 2017

with the final grade of

excellent (1.4)

and has earned 120 ECTS credits.

Master's Thesis: excellent (1.5)

Title: CloudSeg: Semantic Segmentation of 3D Point Clouds Using Deep Learning

Freiburg i. Br., May 22, 2017

Prof. Dr. Ulrich Egert

Chair of the Examination Committee

ID 4174785

EXA 257s(e) (03/2017)

Albert-Ludwigs-Universität Freiburg

Technische Fakultät

Transcript of records

for

Farooq Ahmed Zuberi

born on December 1, 1990

Degree program: Master of Science (M. Sc.), Computer Science, Major, 2011

	Grade/Status	Credits	Remark
Mandatory Modules M.Sc. Informatik (PO-Version 2011)	1.4	70	SS 2017
Master Module	1.5	30	SS 2017
Master's Thesis Topic: CloudSeg: Semantic Segmentation of 3D Point Clouds Using Deep Learning	1.5	25	WS 2016/17
Presentation of the Master's Thesis	BE	5	SS 2017
Core field in Computer Science	1.7	6	SS 2015
Grundlagen der Künstliche Intelligenz / Foundations of Artificial Intelligence - Examination	1.7	6	SS 2015
Master project	1.0	16	WS 2015/16
Project	1.0	16	WS 2015/16
Laboratory	BE	6	WS 2014/15
Laboratory in the research field "Machine Learning"	TRE	6	WS 2014/15
Deepening in Computer Science	1.8	12	WS 2016/17
Maschinelles Lernen / Machine Learning - Examination	2.0	6	WS 2016/17
Systeminfrastruktur für Data Science / System Infrastructure for Data Science - Examination	1.7	6	WS 2014/15
Elective Modules Master of Science in Computer Science	1.2	50	SS 2016
Application Area Biology	1.2	18	SS 2016

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Degree program: Master of Science (M. Sc.), Computer Science, Major, 2011

	Grade/Status	Credits	Remark
Computational Neuroscience	1.2	18	SS 2016
Computational Neuroscience- Modulteil 1	BE	4	SS 2016
Neuroscience - The Basics: Basic and Systems Neurobiology - Studienleistung	BE	4	SS 2016
Computational Neuroscience - Modulteil 2	1.0	7	SS 2016
Models of Neurons and Networks - Prüfung	1.0	7	SS 2016
Computational Neuroscience - Modulteil 3	BE	5	SS 2016
Simulation of Biological Neuronal Networks- Studienleistung	BE	5	SS 2016
Computational Neuroscience - Modulteil 4	2.0	2	SS 2016
Current Research Topics in Systems Neuroscience (S1)	2.0	2	SS 2016
Current Research Topics in Systems Neuroscience- Prüfung	2.0		SS 2016
Specialization in M.Sc. Computer Science PO-Version 2011	1.3	32	SS 2015
Kognitive technical Systems - Specialization	1.3	32	SS 2015
Seminar in the research field "Foundations of Artificial Intelligence"	2.0	4	SS 2015
Seminar in the research field "Social Robotics and Human-Robot Interaction"	0.0	4	SS 2015
Kognitive technical Systems - Specialization in Computer Science I	1.3	12	WS 2014/15
Handlungsplanung / Artificial Intelligence Planning - Examination	1.7	6	WS 2014/15

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born on December 1, 1990

Degree program: Master of Science (M. Sc.), Computer Science, Major, 2011

	Grade/Status	Credits	Remark
Mensch-orientierte Robotik / Human-Oriented Robotics - Examination	1.0	6	WS 2014/15
Kognitive technical Systems - Specialization in Computer Science II	1.3	12	SS 2015
Einführung in die Mobile Robotik / Introduction to Mobile Robotics - Examination	1.3	6	SS 2015
Statistische Mustererkennung / Statistical Pattern Recognition - Examination	1.3	6	SS 2015

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for

Farooq Ahmed Zuberi

born on December 1, 1990

Overall ECTS credits:	120
Final Grade for Degree Program:	1.4
Completion of Degree Program:	April 4, 2017

Freiburg i. Br., May 22, 2017

Prof. Dr. Ulrich Egert

Chair of the Departmental Examination Committee

BE passed TRE regular attendance confirmed

Transcript of Records – Explanations

According to the Examination Regulations of the University of Freiburg for the Master's Program in "Computer Science" – Academic regulations 2011

1. Information's and abbreviations

„Grade/Status"	Note value:	Grading of the Modules/Examinations
	BE:	pass; Modules, which are credit-only and are graded as "BE" if successfully completed.
„ECTS-Points"	Point value:	The sum of the credit for the course examined is given in ECTS (European Credit Transfer and Accumulation System). ECTS-Points are awarded for each Module, which approximately correspond to the scope of the course in each case. 1 ECTS-Point stands for 30 working hours
„Grader"	Name:	The Examination Committee appoints the graders of an Examination/ a Module.
„Remark"	Accreditation:	A period of study completed at another university or other equivalent institute of tertiary education, which is acknowledged as being equivalent to this program.

2. Grading of Examinations/Modules and the Bachelor's Thesis

1.0/1,3	very good/ excellent	an excellent level of achievement
1.7/2.0/2.3	good	a level of achievement lying considerably above the average requirements
2.7/3.0/3.3	satisfactory	a level of achievement fulfilling the average requirements
3.7/4.0	sufficient	a level of achievement which, despite certain deficiencies, still fulfils the requirements

3. Calculation of the Module Grade

The module grade is build from the ECTS-point weighted average (weighted arithmetic mean) of the partial examinations.

4. AwardedFinal Grades

With an average of up to 1.5:	excellent/very good
With an average of 1.6 to 2.5:	good
With an average of 2.6 to 3.5:	satisfactory
With an average of 3.6 to 4.0:	sufficient

5. Overall assessment „with distinction"

If the grade for all the modules is 1.3 or better, the overall assessment of "with distinction" will be awarded.