Muhammad Numair Mansur

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Education:

- **Ph.D. Computer Science:**
  Max Planck Institute for Software Systems (MPI-SWS), Kaiserslautern, Germany (June 2018 - present)
- **Masters of Science in Computer Science:**
  University of Freiburg, Freiburg im Breisgau, Germany (2018)
- **Bachelors of Engineering in Computer Engineering:**
  National University of Sciences and Technology, Islamabad, Pakistan (2013)

Technical/Scientific Experience:

- **Scientific Assistant (Wissenschaftliche Hilfskraft) in Machine Learning Lab [Sept 2015 - Feb 2018]:**
  Worked as a python developer in machine learning lab in the department of professor Frank hutter. We worked on a python framework for efficient Bayesian Optimization called RoBO. More information on RoBO can be found here. The documentation of the tool can be found here. I also sometimes helped in developing / maintaining the department's website.
  - **Publication:**
    RoBO: A Flexible and Robust Bayesian Optimization Framework in Python. [pdf]
    Klein, A. and Falkner, S. and Mansur, N. and Hutter, F.
    In: 31st conference on Neural Information Processing Systems (NIPS 2017), Long Beach, CA, USA.

  python | tensor-flow | travis-ci | circle-ci | matplotlib | machine learning

- **Scientific Assistant (Wissenschaftliche Hilfskraft) in Functional Proteomics group [March 2016 - April 2018]:**
  Worked as a javascript developer in professor Bettina Warscheid's Functional Proteomics group. We developed a flexible and highly modifiable heatmap tool in d3.js . The tool is an extension of D3 heatmap for R but we added much more functionality in the heatmap for example row / column based swapping between Clusters based on their dendogram, locally save the rearranged heatmap as format of your choice, resizing of Heatmap, changing the coloring scheme. The tool currently in a private github repository but we plan to make it public very soon. An online demo can be made if someone is interested.

  javascript | d3.js | shiny | Rstudio | data visualization

- **Student software engineer at 5dlab Gmbh [May 2015 - July 2015]:**
  Worked in Freiburg based startup as a python student software engineer. I was working in the development team of PSIORI a predictive analytics tool for financial data.

  python | sklearn | machine learning

- **CRM Operations Officer at Telenor Pakistan [August 2013 - February 2014]**
  Management of different Oracle Siebel CRM interfaces implemented across Telenor Pakistan. I was also responsible for user and security administration of Siebel, location and resolution of critical data issue in Siebel DB and error handling in live production systems. Another one of my tasks were to perform critical monthly data recons on a database of about 40 million active subscribers at that time.

- **Moderator at Big Data Republic [September 2013 - February 2014]**
  I was one of the moderators of a New York based, IBM sponsored technology blog. As a moderator, I have to Encourage & Promote Reader Discussion on Innovative Topics. Initiate healthy Discussions with the other users of the site. Make sure the users follow the proper Code of Conduct of the site and refrain from spamming and profaning other users of the site.

Master Thesis:

- ### Static Error Trace Analysis Using Aberrant Trace Elements:

  During my master thesis, I worked in the research field of static program analysis in the software engineering group of Prof. Andreas Podelski, under the direct supervision of Dr. Matthias Heizmann and Christian Schilling. We worked on finding specific trace elements in an error trace which we call “aberrant trace elements”. Aberrant trace elements have a unique property that they can single handedly make a trace infeasible. We developed a formal definition of aberrant trace elements and an algorithm to find them in an error trace. Furthermore, we investigated and developed some very useful applications of aberrant trace elements in fault localization and security analysis. Another interesting application of aberrant trace elements was improving the results in **Ultimate** for the error traces that contain over-approximated statements.
  The thesis was awarded the grade **1.3** out of **1.0**. I also plan to continue the collaboration with my previous supervisors and publish our findings. The pdf copy of the thesis can be found here.

Bachelor Project:

- ### Webshow - A web analytics tool (Bachelor thesis):

  A Web Analytics tool made from scratch, using PYTHON, MySQL and JavaScript’s d3.js. A very user friendly tool that allows the user to categorize and visualize his web usage history. Categorization was done through web site text extraction, classification using Python and visualization was done using d3.js. User can perform all sorts of analysis using this tool. I can provide with the report if someone is interested.

Other Activities:

- ### TechCrunch Disrupt Berlin 2017;

  Was part of the organizing team for TechCrunch Disrupt Berlin in december 2017.