SAFDAR AQEEL SAFDAR

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Summary

An enthusiastic computer scientist with excellent academic records and 4+ years of experience working on multiple R&D projects that span the area of software modeling, development, testing, search algorithms, and machine learning at two world-reputed research institutes. I am a results-driven, customer-focused, articulate and analytical software engineer who is skilled in software modeling, software development methods, software testing, machine learning and multi-objective search research.

Education

- **Ph.D. in Software Product Line Engineering (2015-Expected to be completed in June 2019)**
  o University of Oslo, Oslo, Norway
- **MS in Computer Science (2013 – 2015)**
  o National University of Computer & Emerging Sciences (FAST-NU), Islamabad, Pakistan
  o GPA 3.8/4.0
- **BS in Computer Science (2009 – 2013)**
  o National University of Computer & Emerging Sciences (FAST-NU), Islamabad, Pakistan
  o GPA 3.1/4.0

Work Experience

- **IT Architect Graduate at DnB Bank (August 2018- Present)**
  Currently, I am working at DNB Bank as IT Architect Graduate. My job as IT Architect Graduate includes getting hands on experience with a wide range of technologies used in DNB's systems and solving different technical problems for DNB's customers.
- **Ph.D. Scholar at Simula Research Laboratory (July 2015- Present)**
  I have been working as a Ph.D. scholar from July 2015 up till now at Simula Research Laboratory, Oslo, Norway. The object of my Ph.D. thesis is to automate the configuration process in Cyber-Physical System (CPS) Product Lines (PL). Currently, I am working on automated configuration recommendation for interacting products at post-deployment time by applying machine learning and multi-objective search algorithms. I also participated in research activities such as paper reviews, discussions, and reviews for international conferences and journals.
- **Research Assistant at Quest Lab (June 2013-June 2015)**
  I worked as Research Assistant from June 2013 to June 2015 at QUEST lab, Islamabad, Pakistan. During this tenure, I worked on industrial problems with the collaboration of other senior researchers. I planned and conducted controlled experiments and wrote a number of research papers. I also participated in research activities such as paper reviews, experiments, discussions, and peer reviews.
- **Public Relation Officer at Sublime Pakistan**
  I worked as Public Relation Officer at Sublime Pakistan (An event management company) where my responsibility was to interact with the public. We organized a number of formal and informal events in different cities of Pakistan.

Technical Skills

Skills/Proficiency	Proficient	Prior Experience
Programming Languages	Java	Python, R, C#, C++, PHP
Programming Tools	Eclipse	PyCharm, R-Studio, MS Visual Studio, Dreamviewer
Modeling Languages	UML and UML Profiles, Feature Model	CVL, BVR
Modeling Tools	IBM RSA, MagicDraw, Papyrus, Enterprise Architect, Pure::Variants, fmp	CVL tool, BVR tool
Testing Tools	Junit, Selenium, Sikuli	Nunit
Machine Learning and Statistics Tools	Weka, R-Studio, IBM SPSS	

Research Interests and Expertise

- Machine Learning
- Search-based Software Engineering
- Empirical Software Engineering

LinkedIn: www.linkedin.com/in/safdaraqeel
Google Scholar: https://scholar.google.no/citations?user=oaHPLF0AAAAJ&hl=en

- Model-based Testing
- Product Line Engineering
- Model-driven Software Engineering

Research Projects

- *Evaluating UML Modeling Tools:* In this project, we evaluated the capabilities of UML modeling tools in terms of modeler's productivity using controlled experiment. Evaluation results are published in a conference publication at ECMFA-2015.
- *Variability Modeling for Cyber-Physical Systems (CPSs):* In this project, we proposed a set of variation points and modeling requirements to capture the variabilities of *CPS* product lines. Further, we evaluated four existing variability modeling techniques based on framework. Results of this project are published in a conference publication at SAM-2016.
- *Mining Cross Product Line Rules:* In this project, we proposed a technique, which combines machine learning and multi-objective search algorithms to mine the rules specifying the abnormal behavior of system. The results are published in one conference paper at GECCO-2017 and a journal paper accepted for International Journal of Systems and Software.
- *Automated Configuration of CPS Product Lines:* In this project, we proposed a conceptual framework to support the automated configuration of CPS product lines, which involves variability modeling, constraint specifications, and different automated functionalities of a configuration tool. The proposed framework is in process of publication at an international journal.
- *Configuration Recommendation:* Currently I am working on this project in which we are proposing a multi-objective search-based approach to recommend the configurations for a system of systems to ensure the correct behavior of the system.

Publications/Research Work

- Towards Multi-Stage and Multi-Step Automated Product Configuration of Cyber-Physical Systems, **Safdar Aqeel Safdar**, Hong Lu, Tao Yue, Shaukat Ali, Kunming Nie, submitted to an international, 2018
- Employing Multi-Objective Search and Machine Learning to Mine Cross Product Line Rules, **Safdar Aqeel Safdar**, Hong Lu, Tao Yue, Shaukat Ali, accepted for International Journal of Systems and Software (JSS), 2018
- Mining Cross Product Line Rules with Multi-Objective Search and Machine Learning, **Safdar Aqeel Safdar**, Hong Lu, Tao Yue, Shaukat Ali, published in Genetic and Evolutionary Computation Conference, GECCO, 2017.
- Evaluating Variability Modeling Techniques for Supporting Cyber-Physical System Product Line Engineering, **Safdar Aqeel Safdar**, Tao Yue, Shaukat Ali, Hong Lu published in System Analysis and Modeling Conference, SAM, 2016.
- Evaluating UML Modeling Tools based on Modeler's Productivity - A Replicated Study, **Safdar Aqeel Safdar**, Muhammad Zohaib Iqbal, Muhammad Uzair Khan, submitted to an international, 2018
- An Empirical Evaluation of UML Modeling Tool- An Experiment, **Safdar Aqeel Safdar**, Muhammad Zohaib Iqbal, Muhammad Uzair Khan published in European Conference on Modeling Foundations and Applications, 2015
- A Comparative Study of UML Modeling Tools (MS Thesis), **Safdar Aqeel Safdar**, 2015

Academic Services

- Reviewed papers for an international journal Computers in Human Behavior as invited reviewer.
- Reviewed papers for several well reputed international journals and conferences as a sub-reviewer.

Activities, Honors, and Awards

- Very High Distinction (Silver Medalist, second highest) in MS degree
- BS degree partially (50%) funded by Punjab Educational Endowment Fund (PEEF) Scholarship
- MS degree fully funded by ICT R&D, Pakistan
- Regarded as a high achiever in the university magazine (2015)
- Student volunteer in an international conference (ICET 2014)
- Volunteer in Software Tester Meetup at FAST-NU (2014)
- Participated in a technical event (NASCON-2013) as IT head at FAST-NU
- Conducted several workshops of basic-level Asp.Net and PHP at FAST-NU

Personal Skills

- Good Communication Skills
- Problem Solving
- Entrepreneurial Skills
- Quick Learner
- Team Player
- Leadership

Languages

- English (Proficient)
- Norwegian (A1-A2)
- Urdu (Mother Tongue)

References

References will be provided if required.