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| ***OPEYEMI OLUSEGUN ADESINA****Doctor of Philosophy, Computer Science* | Mobile: (613) 501-1140 |
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**Expert Software Engineer and Researcher**

Seeking a full-time position in designing and developing business solutions to grand-challenge problems that demand a blend of research, technical, management and entrepreneurial skills.

**SUMMARY**

* Currently, holds a postdoctoral fellowship award at the University of Waterloo.
* Holds doctorate degree in Computer Science from the University of Ottawa, 2017.
* Holds two patent rights on applied Machine Learning.
* Since 2013, researching and developing approaches to analyze model-based software systems.
* Over 10 years of programming experience in Java/C++/C and object-oriented software development.
* Proficient in algorithms analysis and development.

**CORE COMPETENCIES**

Software Engineering **|** Software Modeling **|** Java, C, C++ Programming **|** University Teaching

Software Testing and Formal Analysis **|** Machine Learning **|** Continuous Integration **|** Automotive Systems

Algorithm Design and Analysis **|** Test-Driven Development **|** Research and Development

**EXPERIENCES AND ACHIEVEMENTS**

**Postdoctoral Fellow, University of Waterloo** 09/2017 – Present

* Explored strategies to optimize the state-space required to determine the conformance of state machine systems with their requirements by model checking. At this phase, I performed bi-simulation of software models and evaluated performances of various modeling approaches based on time, memory, number of BDD nodes.
* Designed and analyzed algorithms to optimize software models for analysis purposes. This task was a key step to develop and implement software infrastructure to realize state-space optimization in state machine models.
* Developed and analyzed various case studies so as to justify the applicability of our approach to real-world problems.

**TECHNOLOGIES**: UML, Umple, Java, nuXmv, Alloy, LTL, CTL, GIT, Travis CI, LINUX.

**Research Assistant, University of Ottawa** 09/2013 – 08/2017

* Researched and developed tools to transform Umple to Alloy and nuXmv input languages. To realize this, I conducted performance (memory, time, BDDs) evaluation of various modeling approaches to select the best approach and developed meta-models for model transformation purposes.
* Developed a sound and novel strategy to encode state machines with and-cross transitions; a method that discovered nondeterminism; and reachability of states of state machines. I deployed the approach on a published case study and found a bug in the system.
* Practiced agile and rigorous test-driven development (TDD) methodologies. As a developer on an open-source project – Umple, our team adopted continuous integration tools (e.g., Travis CI, GIT, SVN) for production purposes. I developed patches, test cases and make pull requests to fix bugs and enhance Umple.

**TECHNOLOGIES**: UML, Umple, Java, nuXmv, Alloy, LTL, CTL, GIT, Travis CI, SVN, LINUX.

**Visiting Scientist (Software and Infotainment Team), General Motors Canada** 06/2014 – 08/2014

* Explored the feasibility of a tool to predict users’ comfort settings for vehicular products. In doing so, I conducted performance evaluation of various algorithms on the experimental data. This requires me to apply various machine learning tools and algorithms.
* Formulated the framework to predict air-conditional settings and prioritized list of telephone numbers for specific users of vehicular product which resulted in the award of two patent rights. Developed a prototype of the resulting system using model-driven technology – Umple; while algorithm logics are developed in Java language.
* Developed various test cases and performed unit testing.

 **TECHNOLOGIES**: UML, Java, WEKA, R-Statistics, MOA, Umple, jUnit.

**Assistant Lecturer, Ajayi Crowther University**  09/2012 – 06/2013

* Taught various undergraduate courses in Computer Science and Humanities and supervised various term and 4th-year undergraduate projects. This required development of course and lab materials and conducting exams and assessments on designated courses.
* Participated as a member of examination and curriculum development committees. I served on the curriculum review committee as the secretary. At meetings I documented contributions of members, produce and dispatch minutes to appropriate quarters.
* Mentored first year Computer Science students on choices of courses and student affairs. Besides, I was elected a member of the advisory board for Computer Science Students’ Association.

**EDUCATION**

09/2013 – 07/2017 **University of Ottawa, School of Electrical Engineering and Computer Science**

 Doctor of Philosophy in Computer Science

 **Thesis**: Integrating formal methods with model-driven engineering

 **Supervisors**: Dr. Timothy Lethbridge and Dr. Stéphané Somé

10/2009 – 09/2011 **University of Ilorin, Department of Computer Science**

 Master of Science in Computer Science

 **Dissertation**: Software infrastructure for grid computing

 **Supervisor**: Dr. Reuben Aremu (Best Graduating Student)

03/2005 – 06/2008 **University of Ilorin, Department of Computer Science**

 Bachelor of Science in Computer Science

 **Grade**: Second Class Honours (Upper Division – 4.05/5.00)

**TECHNICAL SKILLS**

**Software Design:** UML, Umple Technology, Design Patterns, Agile Methodology.

**Programming Languages:** Java, C/C++, Python, Ruby.

**Formal Languages:** Alloy, SMV, Promela, LTL, CTL, UPPAAL, COQ.

**Software Testing:** jUnit, Mockrunner, EasyMock.

**Mobile Development:** Android SDK.

**Web Development:** CSS, HTML, jQuery, JavaScript.

**Data Mining:** WEKA, MOA, R, TensorFlow.

**GUI Development:** Java Swing & AWT.

**Operating System:** Unix/Linux and Windows.

**Continuous Integration:** Git, SVN, Travis CI.

**LEADERSHIP, PROFESSIONAL ACTIVITIES AND AWARDS**

* Founder, Home Away from Home Club, University of Ottawa.
* Awarded postdoctoral fellowship award at David Cheriton School of Computing (2017-2018) – CAD $50,000.00.
* Awarded NECSIS scholarship award (2014) – CAD $10,000.00.
* Awarded research bursary for doctoral studies at University of Ottawa (2013 - 2017) – CAD $88,000.00.
* Coordinator, Millennium Development Goals Advocacy Project in Bayelsa state (02-08/2009).
* Professional Member, National Society of Black Engineers (NSBE).

**SELECTED PUBLICATIONS**

* **Adesina O.O.**, Lethbridge T.C., Somé S.S, Abdelzad V., Alvine, B.B. “Improving formal analysis of state machines with particular emphasis on and-cross transitions.”, Journal of Computer Languages Systems and Structures. (In Press - Journal)
* Alvine B.B, Lethbridge T.C., Garzon M., **Adesina O.O.** “Design and implementation of distributed expert systems: on a control strategy to manage the execution flow of rule activation.”, Journal of Expert Systems with Applications. (Journal)
* Stevanovic M., Elnajjar H., Gautama N.R., **Adesina O**, Abdelzad V. “Personalizing vehicular comfort settings for a specified user.” Publication No.: US20170158023A1, Date: 8th June, 2017. (Patent)
* Stevanovic M., Elnajjar H., Gautama N.R., **Adesina O**, Abdelzad V. “Determining a prioritized list of telephone numbers for a specific user.” Publication No.: US9614950B1, Date: 4th April, 2017. (Patent)
* **Adesina O.O.**, Lethbridge T.C., Somé S.S., “A fully automated approach to discovering non-determinism in state machine diagrams”, In proceedings of the 10th International Conference on Quality of Information and Communications Technology – Quality Aspects in Requirements Engineering (Quatic’16).
* **Adesina O.O.**, Somé S.S., Lethbridge T.C. “Modeling and-cross transitions for symbolic model verification”, In proceedings of the 13th Workshop on Model Design, Verification and Validation (MoDeVVa’16).