LEONARD PETER BINAMUNGU, PhD

Lecturer in Computer Science and Software Systems Analyst, Department of Computer Science and Engineering, University of Dar es Salaam

DBLP: https://dblp.org/pid/217/3747.html

Google Scholar: shorturl.at/jnwWX

SUMMARY OF KEY QUALIFICATIONS AND EXPERIENCE:

I am a Computer Scientist with strong theoretical and practical knowledge and skills in a range of computing aspects. My research interests are mainly in Software Engineering and Information Systems, focusing on automated software testing, as well as analysis, design, implementation, and evaluation of Information Systems. I am also intrigued by research and practical application of knowledge and skills in the following areas: agile testing, test-suite maintenance, software smells, clone detection, mining software repositories, empirical software engineering, and implementation of Information Systems in developing countries. In July-August 2020, I participated in the research for evaluating the success of the Government electronic Payment Gateway (GePG), a system currently used for revenue collection by the Government of the United Republic of Tanzania. I am also a member of the Centre for Development Informatics, University of Manchester, UK. As well, I am a reviewer for various international peer reviewed conferences and journals.

I have a PhD in Computer Science from the University of Manchester, United Kingdom, which I earned in July 2020; I specialized in Software Engineering, and my thesis was on Dectecting and Correcting Semantic Duplication in Behaviour Driven Development Specifications. I have a Master of Science in Computer Science from Osmania University, Hyderabad (India) which I earned in 2012. Also, I have a Bachelor of Science in Computer Science from the University of Dar es Salaam which I earned in 2009. From 2016 to 2019, I worked as a Graduate Teaching Assistant in the School of Computer Science, University of Manchester, UK, covering courses about general software engineering, agile software engineering, and computer graphics and image processing. In addition, since 2009, I have been working as an academic member of staff in the Department of Computer Science and Engineering, University of Dar es Salaam, where I joined as a tutor in November 2009, became an Assistant Lecturer in August 2012 and a Lecturer in July 2020. I teach various courses in computer programming, software engineering, information systems analysis, design and implementation, and research methodology.

I have strong skills in the analysis, design and implementation of Information Systems. For the past eleven years, I have been involved in the analysis, design and countrywide implementation of various Information Systems for the health sector. Examples of such projects are: District Health Information Software (DHIS2), Human Resource for Health Information Software (HRHIS), and electronic Integrated Disease Surveillance and Response (eIDSR). I have strong knowledge and skills in the application of version control systems for distributed software engineering.

SELECTED SKILLS: Software systems analysis and design, implementation of software systems, software projects management, automated software testing, Behaviour-Driven Development (BDD), Test-Driven Development (TDD) with JUnit, effective research communication, scientific writing,

scientific evaluation, empirical research methods in software engineering and information systems, and Aspect-Oriented Software Engineering.

SELECTED PROJECTS:

- **DHIS2:** From 2009 to date, I have been working as the system analyst and national implementer of the DHIS2, working as part of the team responsible for the development, customization, training, deployment and user support for DHIS2 in Tanzania, Africa and the rest of the world.

- **HRHIS:** From 2009 to date, I have been working as the system analyst, developer and national implementer of the Human Resource for Health Information Software (HRHIS), a software to facilitate the collection and analysis of information related to the health workforce of the entire country of Tanzania, with the aim of informing the decision making process on the country health workforce agenda.

- **eIDSR Tanzania:** From 2013 to date, I have been part of the team responsible for analysis, development, training and national deployment of the electronic Integrated Diseases Surveillance and Response (eIDSR) system. The system facilitates immediate and weekly reporting of certain diseases of public health importance through mobile phones, to inform diseases surveillance and response teams in a bid to contain the spread of diseases.

RESEARCH INTERESTS: Agile testing, test-suite maintenance, software smells, clone detection, empirical software engineering, and information systems .

PUBLICATIONS:

Here are some of my publications, but an up-to-date list of my publications can be found on my website (https://lepebina.github.io/publications).

- **L.P. Binamungu**, Detecting and Correcting Duplication in Behaviour Driven Development Specifications, PhD Thesis, Department of Computer Science, University of Manchester [https://www.research.manchester.ac.uk/portal/files/182559903/FULL_TEXT.PDF]

- **L.P. Binamungu**, and J. T. Mbelwa: Empirical Distribution of Code Reviews in DHIS2 Repositories and the Impact of Code Reviews on the Popularity of DHIS2 Repositories on GitHub. In African Conference on Software Engineering (ACSE 2020), Nairobi, Kenya, September 16-17 2020. CEUR-WS.org [http://ceur-ws.org/Vol-2689/paper4.pdf]

- **Binamungu, L. P.**, Embury, S. M., & Konstantinou, N. (2020). Characterising the Quality of Behaviour Driven Development Specifications. In 21st International Conference on Agile Software Development (XP 2020), June 8-12, IT University of Copenhagen, Copenhagen, Denmark. Springer, Cham

- Baryashaba, A., Musimenta, A., Mugisha, S., & **Binamungu, L. P.** (2019). Investigating the adoption of an integrated hospital information system in rural Uganda: A case of Kisiizi Hospital. In International Conference on Social Implications of Computers in Developing Countries (pp. 316-325). Springer, Cham

- **L.P. Binamungu**, S. Embury, N. Konstantinou: Maintaining Behaviour Driven Development Specifications: Challenges and Opportunities. 25th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2018), IEEE, 2018

- **L.P. Binamungu**, S. Embury, N. Konstantinou: Detecting Duplicate Examples in Behaviour Driven Development Specifications. 2018 IEEE Workshop on Validation, Analysis and Evolution of Software Tests (VST), IEEE, 2018

EDUCATION:

- PhD in Computer Science, University of Manchester, July 2020.

- MSc in Computer Science (First Class with Distinction), Osmania University, Hyderabad (India), June 2012.

- B.Sc (First Cass with Honours) in Computer Science, University of Dar es Salaam, December 2009.

- Advanced Certificate of Secondary Education (Division One), Mzumbe Secondary School (2004- 2006) majoring in Physics, Chemistry and Mathematics (PCM).

- Certificate of Secondary Education (Division One), Bwiru Boys Technical School (2000-2003).

WORK EXPERIENCE:

Employer	From	To	Position Held	Duties
University of Dar es Salaam	2020	to date	Lecturer	Deliver lectures for undergraduate and postgraduate courses; supervise postgraduate research students; conduct scientific research; engage in consultancy and public service activities
University of Manchester	2016	2019	Graduate Teaching Assistant	Support lectures, labs, and workshops; mark students'

				assignments and projects
University of Dar es Salaam	August 2012	Present	Assistant Lecturer	Deliver lectures for undergraduate courses; supervision of undergraduate students' projects, etc
University of Dar es Salaam	November 2009	July 2012	Tutorial Assistant	Support lectures for undergraduate courses; supervision of undergraduate students' projects, etc

SELECTED AWARDS:

• Recipient of the University of Manchester Tom Kilburn scholarship for international students to pursue a PhD in Computer Science at the University of Manchester from 2016.

• Recipient of Indian-African Scholarship award for MSc training in India from July 2010 to June 2012

LANGUAGES:

LANGUAGE	SPEAKING	WRITING	READING
English	Excellent	Excellent	Excellent
Swahili	Excellent	Excellent	Excellent

REFEREES:

1. Dr. Honest C. Kimaro- Senior Lecturer, Department of Computer Science and Engineering,University of Dar es Salaam. (honestck@gmail.com).

2. Dr. Mercy Mbise-Lecturer, Department of Computer Science and Engineering, University of Dar es Salaam. (mmbise@udsm.ac.tz).

3. Dr Suzanne M. Embury, Reader in Software Engineering, Department of Computer Science, University of Manchester (suzanne.m.embury@manchester.ac.uk)

CERTIFICATION:

I the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications and my experience.

Date : 29/12/2020

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