Keheliya Gallaba

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SUMMARY

- Experienced in building dev tools at **Microsoft Research, Fortinet,** & **WSO2** in **Java, JS, Python, R**.
- Published in top-tier Software Engineering research journals & conferences (**TSE, ASE, ICSME**).
- Currently, mining large-scale data sources in software engineering (i.e., **GitHub, StackOverflow,** *&* **TravisCI**) to provide insights for developers.
- Canadian permanent resident.

RESEARCH EXPERIENCE

YourBase Inc., Redmond, WA, USA
Visiting Researcher   Jun 2019 – Present
  Supervisors: Yves Junqueira and John Ewart
  Focus: Acceleration of Continuous Integration Builds

Microsoft Research, Cambridge, UK
PhD Research Intern, Systems and Networking Group   Jun 2018 – Sep 2018
  Supervisors: Dr Katja Kevic and Dr Brendan Murphy
  Focus: Automatic removal of feature gates in source code

INDUSTRIAL EXPERIENCE

Fortinet Inc., Vancouver, BC, Canada
Software Development Engineer II, Forticlient Team   Feb 2016 – Aug 2016
  Worked on the system for generating software vulnerability signatures, validating them,
  and delivering them to endpoint security software (Forticlient).

WSO2 Inc., Colombo, Sri Lanka
Senior Software Engineer, Integration Technologies Team   Apr 2013 – Nov 2013
  Development and support of open source middleware solutions for enterprise integration problems.
  PoC development, deployment, and on-site support for clients in US, Switzerland, Sweden, and New Zealand.

Software Engineer, Integration Technologies Team   Dec 2011 – Mar 2013
  Worked with WSO2 Business Process Server, Enterprise Service Bus, Identity Server & Governance Registry.
  Experience with WS-BPEL & other WS-* standards, SOAP/REST web services.
  XPATH, XSLT, Apache ODE and Eclipse plug-in development.

EDUCATION

McGill University, Montréal, QC, Canada
Ph.D. in Software Engineering   Sep 2016 – Present
  Thesis: Improving the Robustness and Efficiency of Continuous Integration and Continuous Deployment
  Adviser: Prof. Shane McIntosh
  Publications: MSR17a, MSR17b, MSR18a, MSR18b, TSE18, ASE18, MSR19, ICSME19, TSE20.

University of British Columbia, Vancouver, BC, Canada
M.A.Sc. in Software Engineering   Jan 2014 – Dec 2015
  Thesis: Characterizing and refactoring asynchronous JavaScript callbacks
  Advisers: Prof. Ali Mesbah and Prof. Ivan Beschastnikh
  Publications: ESEM15, ICSME17.

University of Moratuwa, Moratuwa, Sri Lanka
B.Sc. (Hons.) in Computer Science and Engineering   May 2007 – Nov 2011
  Thesis: An analysis of BPMN 2.0 as a business process execution language
  Advisers: Vishaka Nanayakkara and Dr Milinda Pathirage
  Publications: CeBPM12.

AWARDS & RECOGNITION

Mitacs Accelerate International Award and Graduate Mobility Award   May 2019
  Funding to study and conduct research abroad as part of the McGill degree program.

FRQNT Doctoral Research Award (Bourses de doctorat en recherche)   May 2018
  Ranked #1 in the ICT group and obtained the competitive scholarship provided by
  Fonds de recherche du Québec – Nature et technologies (FRQNT).

McGill Engineering Doctoral Award (MEDA)   2016 – 2019
  Full scholarship with stipend for PhD studies at McGill University.

Best Full Paper Award   Oct 2015
  Awarded at The ACM/IEEE International Symposium on Empirical Software Engineering and Measurement.

ISERN Student Travel Grant   Oct 2015
  Awarded by The International Software Engineering Research Network (ISERN) to attend ESEM '15.

PUBLICATIONS

FULL PAPERS IN INTERNATIONAL JOURNALS

[TSE20] K. Gallaba, Y. Junqueira, J. Ewart, and S. McIntosh, "Accelerating Continuous Integration by Caching Environments and Inferring Dependencies," *IEEE Transactions on Software Engineering*, To appear, 2020. [📄 **PDF**]

[TSE18] K. Gallaba and S. McIntosh, "Use and Misuse of Continuous Integration Features: An Empirical Study of Projects that (mis)use Travis CI," *IEEE Transactions on Software Engineering*, 46(1): pp. 33–50, 2018. [📄 **PDF**]

FULL PAPERS IN INTERNATIONAL CONFERENCES

[ASE18] K. Gallaba, C. Macho, M. Pinzger, and S. McIntosh, "Noise and Heterogeneity in Historical Build Data: An Empirical Study of Travis CI", In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, 87–97, Sep 2018. [📄 **PDF**]

[ICSME17] K. Gallaba, Q. Hanam, A. Mesbah, and I. Beschastnikh, "Refactoring Asynchrony in JavaScript", In *Proceedings of the International Conference on Software Maintenance and Evolution (ICSME)*, 353–363, Sep 2017. [📄 **PDF**]

[ESEM15] K. Gallaba, A. Mesbah, and I. Beschastnikh, "Don't Call Us, We'll Call You: Characterizing Callbacks in JavaScript", In *Proceedings of the International Symposium on Empirical Software Engineering and Measurement (ESEM)*, pp. 247–256, Oct 2015. 🏆 **Best Paper Award** [📄 **PDF**]

SHORT PAPERS IN INTERNATIONAL CONFERENCES

[ICSME19] K. Gallaba, "Improving the Robustness and Efficiency of Continuous Integration and Deployment", In *Proceedings of the International Conference on Software Maintenance and Evolution (ICSME)*, pp. 619–623, Sep 2019. [📄 **PDF**]

[MSR19] D. Abric, O. E. Clark, M. Caminiti, K. Gallaba, and S. McIntosh, "Can Duplicate Questions on Stack Overflow Benefit the Software Development Community?", In *Proceedings of the 16th International Conference on Mining Software Repositories (MSR), Mining challenge*, pp. 230–234, May 2019. [📄 **PDF**]

[MSR18a] N. Rabbani, M. S. Harvey, S. Saquif, K. Gallaba, and S. McIntosh , "Revisiting "Programmers' Build Errors" in the Visual Studio Context", In *Proceedings of the 15th International Conference on Mining Software Repositories (MSR), Mining challenge*, pp. 98–101, May 2018. [📄 **PDF**]

[MSR18b] R. Amlekar, A. F. R. Gamboa, K. Gallaba, and S. McIntosh, "Do Software Engineers Use Autocompletion Features Differently Than Other Developers?", In *Proceedings of the 15th International Conference on Mining Software Repositories (MSR), Mining challenge*, pp. 86–89, May 2018. [📄 **PDF**]

[MSR17a] M. Manglaviti, E. Coronado-Montoya, K. Gallaba, and S. McIntosh, "An Empirical Study of the Personnel Overhead of Continuous Integration", In *Proceedings of the 14th International Conference on Mining Software Repositories (MSR), Mining challenge*, pp. 471–474, May 2017. [📄 **PDF**]

[MSR17b] Y. Khan, Y. Gupta, K. Gallaba, and S. McIntosh, "The Impact of the Adoption of Continuous Integration on Developer Attraction and Retention", In *Proceedings of the 14th International Conference on Mining Software Repositories (MSR), Mining challenge*, pp. 491–494, May 2017. [📄 **PDF**]

FULL PAPERS IN INTERNATIONAL WORKSHOPS

[CeBPM12] K. Gallaba, U. Pavalanathan, I. Jayawardena, E. Sooriyabandara, V. Nanayakkara, "Levi — A Workflow Engine Using BPMN 2.0", Workshop on Cloud-enabled Business Process Management (CeBPM 2012), Paphos, Cyprus, pp. 92–104, Nov 2012.

ACADEMIC SERVICE

REVIEWER

IEEE Transactions on Software Engineering **(TSE)**   2019
Journal of Systems and Software **(JSS)**   2019

International Conference on Program Comprehension **(ICPC)** - Tools Track   2019
Journal of Information and Software Technology **(IST)**   2018
International Conference on Object-oriented Programming, Systems, Languages, and
Applications **(OOPSLA)** - Artifact Evaluation Committee   2017

CO-REVIEWER

Empirical Software Engineering Journal **(EMSE)**   2019
International Conference on Software Analysis, Evolution, and Reengineering **(SANER)** 2019
International Conference on Mining Software Repositories **(MSR)**   2018
Canadian Conference on Electrical and Computer Engineering **(CCECE)**   2018
International Conference on Software Maintenance and Evolution **(ICSME)**   2017

MENTORING & TEACHING EXPERIENCE

Undergraduate Students (Co-advised with Dr. Shane McIntosh)

Durham Abric, Oliver Clark, Matthew Caminiti   Sep 2018 – Apr 2019
  Co-authored Papers: MSR19

Rahul Amlekar, Noam Rabbani, Mike Harvey,
Sadnan Saquif, Andrés Felipe Rincón Gamboa   Sep 2017 – Apr 2018
  Co-authored Papers: MSR18a, MSR1b

Marco Manglaviti, Eduardo Coronado-Montoya, Yash Gupta, Yusaira Khan Sep 2016 – Apr 2017
  Co-authored Papers: MSR17a, MSR17b

Teaching Assistant

McGill University, Montréal, QC, Canada
  ECSE321 Introduction to Software Engineering   Fall 2017

University of British Columbia, Vancouver, BC, Canada
  EECE416 Software Testing and Analysis   Winter II 2014
  EECE310 Software Engineering   Winter II 2013 & Winter I 2014