

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.

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.

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

- [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. Abrić, 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, 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, Sep 2017 – Apr 2018
 Sadnan Saquif, Andrés Felipe Rincón Gamboa
 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