

# Keheliya Gallaba

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## SUMMARY

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

## RESEARCH EXPERIENCE

### YourBase Inc., Redmond, WA, USA

Visiting Researcher

Supervisors: Yves Junqueira and John Ewart

Focus: Acceleration of Continuous Integration Builds

Jun 2019 – Present

### Microsoft Research, Cambridge, UK

PhD Research Intern, Systems and Networking Group

Supervisors: Dr Katja Kevic and Dr Brendan Murphy

Focus: Automatic removal of feature gates in source code

Jun 2018 – Sep 2018

## INDUSTRIAL EXPERIENCE

### Fortinet Inc., Vancouver, BC, Canada

**Software Development Engineer II**, Forticlient Team

Worked on the system for generating software vulnerability signatures, validating them, and delivering them to endpoint security software (Forticlient).

Feb 2016 – Aug 2016

### WSO2 Inc., Colombo, Sri Lanka

**Senior Software Engineer**, Integration Technologies Team

Development and support of open source middleware solutions for enterprise integration problems.

Apr 2013 – Nov 2013

**Software Engineer**, Integration Technologies Team

Worked with WSO2 Business Process Server, Enterprise Service Bus, Identity Server & Governance Registry. Experience with WS-BPEL & other WS-\* standards, SOAP/REST web services.

Dec 2011 – Mar 2013

XPATH, XSLT, Apache ODE and Eclipse plug-in development.

## EDUCATION

### McGill University, Montréal, QC, Canada

Ph.D. in Software Engineering

Thesis: Improving the Robustness and Efficiency of Continuous Integration and Continuous Deployment

Adviser: Prof. Shane McIntosh

Publications: MSR17a, MSR17b, MSR18a, MSR18b, TSE18, ASE18, MSR19.

Sep 2016 – Present

### University of British Columbia, Vancouver, BC, Canada

M.A.Sc. in Software Engineering

Thesis: Characterizing and refactoring asynchronous JavaScript callbacks

Advisers: Prof. Ali Mesbah and Prof. Ivan Beschastnikh

Publications: ESEM15, ICSME17.

Jan 2014 – Dec 2015

### University of Moratuwa, Moratuwa, Sri Lanka

B.Sc. (Hons.) in Computer Science and Engineering

Thesis: An analysis of BPMN 2.0 as a business process execution language

Advisers: Vishaka Nanayakkara and Dr Milinda Pathirage

Publications: CeBPM12.

May 2007 – Nov 2011

## AWARDS & RECOGNITION

Mitacs Accelerate International Award and Graduate Mobility Award

Funding to study and conduct research abroad as part of the McGill degree program.

May 2019

FRQNT Doctoral Research Award (Bourses de doctorat en recherche)

Ranked #1 in the ICT group and obtained the competitive scholarship provided by Fonds de recherche du Québec – Nature et technologies (FRQNT).

May 2018

McGill Engineering Doctoral Award (MEDA)

Full scholarship with stipend for PhD studies at McGill University.

2016 – 2019

Best Full Paper Award

Awarded at The ACM/IEEE International Symposium on Empirical Software Engineering and Measurement.

Oct 2015

## 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*, 2018.

## 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.
- [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.
- [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**

## 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)*, To Appear, Sep 2019.
- [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.
- [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.
- [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.
- [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.
- [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.

## 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 ( <b>EMSE</b> )	2019
International Conference on Software Analysis, Evolution, and Reengineering ( <b>SANER</b> )	2019
International Conference on Mining Software Repositories ( <b>MSR</b> )	2018
Canadian Conference on Electrical and Computer Engineering ( <b>CCECE</b> )	2018
International Conference on Software Maintenance and Evolution ( <b>ICSME</b> )	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