

# Keheliya Gallaba

3480 Rue University, Montréal, QC, Canada  
keheliya.gallaba@mail.mcgill.ca • +1 (514) 806-4669 • <http://keheliya.github.io/>

## SUMMARY

- Experience in building developer tools at *Microsoft Research*, *Fortinet*, & *WSO2* in *Java*, *Node.js*, *Python*
- Mining large-scale data sources in software engineering (i.e., *GitHub*, *StackOverflow*, & *TravisCI*) to provide insights for developers, as my PhD research.
- Published in top-tier *Software Engineering* research journals & conferences (*TSE*, *ASE*, *ESEM*, *MSR*).

## 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 Tools
  - 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.

## 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

- [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, 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
- 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
- Journal of Systems and Software (**JSS**) 2017

**MENTORING  
& TEACHING  
EXPERIENCE**

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

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