# PHI DIEP BUI

Ph.D Student, Uppsala University

## BASIC INFORMATION


| | |
|---|---|
| *Full name* | : Phi Diep Bui |
| *Office Address* | : Box 337, SE-751 05 Uppsala, Sweden |
| *Phone* | : (+46)72 2505 696 |
| *Email* | : bui.phi-diep@it.uu.se |
| *Website* | : `diepbp.github.io` |


## DOMAIN INTEREST

- Automated Program Verification
- Distributed Systems
- Security and Privacy
- Constraint Solving

## WORKING EXPERIENCE

- **Microsoft Research** *Jul 2018 - Oct 2018*
  *PhD Intern*
  **Mentor**: Akash Lal
  **Task**: Developing a distributed model checker using Azure Cloud services for verifying the safety property of large Boogie programs, e.g. 200k LoC.
- **Uppsala University, Sweden** *Mar 2014 - Oct 2014*
  *Project Assistant*
  **Mentor**: Mohamed Faouzi Atig
  **Task**: Developing a model checker for verifying the safety property of concurrent C/C++ programs.
- **National Institute of Informatics (NII), Tokyo, Japan** *Mar 2013 - Aug 2013*
  *Master Intern*
  **Mentor**: Ryuichi Takahashi
  **Task**: Developing a self adaptive systems for robots.

## PUBLICATIONS

- **Chain Free String Constraints** -
  Parosh Aziz Abdulla, Mohamed Faouzi Atig, Bui Phi Diep, Petr Janku, Lukáš Holík. $17^{th}$ International Symposium on Automated Technology for Verification and Analysis (ATVA'19). **Best Paper Award.**
- **Trau: SMT Solver for String Constraints** -
  Parosh Aziz Abdulla, Mohamed Faouzi Atig, Yu-Fang Chen, Bui Phi Diep, Lukáš Holík, Ahmed Rezine and Philipp Rümmer. Formal Methods in Computer-Aided Design, FMCAD'18.
- **Flatten and Conquer: A Framework for Efficient Analysis of String Constraints** -
  Parosh Aziz Abdulla, Mohamed Faouzi Atig, Yu-Fang Chen, Bui Phi Diep, Lukáš Holík, Ahmed Rezine and Philipp Rümmer. $38^{th}$ ACM SIGPLAN Conference on Programming Language Design and Implementation, PLDI'17.
- **Counter-Example Guided Program Verification** -
  Parosh Aziz Abdulla, Mohamed Faouzi Atig, and Bui Phi Diep. $21^{st}$ International Conference on Formal Methods, FM'16.

**Authors are list in alphabetical order. I am the corresponding author of the publications above.*

## RESEARCH EXPERIENCE / TOOLS

- **Efficient Solver for String Equations** *2016 - present*
  Developing an open-source string solver **Trau**, targeting to grammar and transducer constraints. Trau uses Microsoft SMT Z3 solver as the external solver. Trau performs better than state of the art string solvers such as CVC4, Z3-str3, S3P.
- **Verification of Concurrent Programs** *2015 - present*
  Developing a model checker **CEGPV** to verify concurrent C/C++ programs. CEGPV is about 10 times faster than CBMC - state of the art C++ model checker.

## EDUCATION

- **Uppsala University, Sweden** *2015 - present*
  Ph.D in Computer Science
  **Advisor**: Mohamed Faouzi Atig and Parosh Aziz Abdulla
- **University of Engineering and Technology, VNU Hanoi** *2007 - 2014*
  B.Sc and M.Sc in Computer Science
  **Advisor**: Mohamed Faouzi Atig and Nguyen Viet Ha
  **Master thesis**: Avoiding State-Space Explosion in Model-Checker

## TEACHING

- Teaching Assistant of Programming Theory: Fall 2016, Fall 2017.
- Teaching Assistant of Operating Systems and Process-Oriented Programming: Spring 2016, Spring 2017, Spring 2018.

## PROGRAMMING LANGUAGES

C/C++/C# (expert), Java (proficient), Python (prior experience)

## SERVICES

- Program Committee of ECOOP'19 Doc Symposium.
- Artifact Evaluation Committee of TACAS'19, ATVA'19.
- External Reviewer of CAV'18, TACAS'17.

## REFERENCES


- **Assoc. Prof. Mohamed Faouzi Atig**
  Department of Information Technology, Uppsala University, Sweden
  Email: mohamed_faouzi.atig@it.uu.se
  Website: `http://www.it.uu.se/katalog/mohat117`
- **Prof. Parosh Aziz Abdulla**
  Department of Information Technology, Uppsala University, Sweden
  Email: parosh.abdulla@it.uu.se
  Website: `http://user.it.uu.se/~parosh/`