Yichen Yan

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WORK EXPERIENCE

Alibaba Cloud, Shanghai   03/2022 – now

(Senior Engineer)   Runtime optimization for CPython/Node.js and architecture-specific optimization

Oracle Labs, Zurich, Switzerland   09/2020 – 02/2021

(Student Intern)   Loom support for Graal Native Image (AOT compilation of coroutine in Java)
- https://github.com/oracle/graal/commits?author=oraluben

PingCAP, remote   06/2020 – 08/2020, 05/2021 – 07/2021

(Intern)   Improve stability of TiDB with fuzzing-based approaches.
- Design and implement a configuration-oriented fuzzing tool Matrix. (2020)
- Introduce state-of-the-art fuzzing approaches to test SQL layer of TiDB. (2021)

ETH Zurich Zurich, Switzerland   05/2019 – 12/2019

(Visiting Student)   Research in programming language and testing in Prof. Zhendong Su's group.
- TA of Compiler Design, fall 2019.

EDUCATION

East China Normal University, Shanghai, China   09/2017 – 03/2022

M.S. in Software Engineering (SE)

East China Normal University, Shanghai, China   09/2013 – 06/2017

B.S. in Software Engineering (SE)

PROJECTS

MC Fuzz   https://tingsu.github.io/files/fse19-MCFuzz.pdf

(Python / C++ / Clang / Docker)   Design and implement MCFuzz to fuzz and test Model Checkers. The tool takes a general C source code to generate test cases for model checker.
- Well designed and easy to extend to other fuzzing strategy/model checkers.
- Docker based isolation.

Voile   https://github.com/owo-lang/voile-rs

(Rust)   Voile is a dependently-typed programming language features in first-class sums and records.
- Dependent type-checking;
- Implicit argument checking.

SKILLS

- **Programming Languages**: Experienced in Python, confortable with C++/C#/Java/Rust/OCaml/Go.
- **Compilers**: Solid knowledge of compiler, familiar with GraalVM and Clang/LLVM toolchain.
- **Developing Experience**: Have experience with various type of projects, including but not limited to web (Angular/Vue/PHP/Python), client-side program for different perpous and online game (WebSocket, HTML5).
- **Developing Tools**: Familiar with git workflow and have experience with team tools like YouTrack, Jira, GitHub.
- **Programming Style**: Experienced in writing well-documented or easy-understanded code.
- **Language and Communication**: Fluent in English, and willing to cooperate with others in team.
- **Problem Solving**: Able to identify and solve problems in computer science and programming fields.

MISCELLANEOUS

- Opensource Contribution: contributed to Graal, LLVM/Clang, Python and some other projects.

PUBLICATIONS

- Fully automated functional fuzzing of Android apps for detecting non-crashing logic bugs
  Su, T., **Yan, Y.**, Wang, J., Sun, J., Xiong, Y., Pu, G., Wang, K., Su, Z. *OOPSLA 2021*
- Finding and Understanding Bugs in Software Model Checkers
  Zhang, C, Su, T., **Yan, Y.**, Zhang, F., Pu, G., and Su, Z. *ESEC/FSE 2018*
- Smartunit: empirical evaluations for automated unit testing of embedded software in industry
  Zhang, C., **Yan, Y.**, Zhou, H., Yao, Y., Wu, K., Su, T., Miao, W. and Pu, G. *ICSE 2018 SEIP*