

# Yuyang(Peter) Rong

425 La Rue Rd, 2110 Watershed Science ◇ Davis, CA 95616  
(+1)530 · 601 · 3646 ◇ PeterRong96@gmail.com ◇ [Webpage](#) ◇ [Github](#)

## EDUCATION

### UC Davis

Sep 2019 - Jun 2024

*Ph.D. candidate in Computer Science*

*Davis, CA*

- Research interest: software security, fuzzing, dynamic taint analysis.

### ShanghaiTech University

Sep 2015 - Jun 2019

*B.E. Computer Science and Technology*

*Shanghai, China*

- GPA 3.80/4 (Ranking: 5/124)

## EXPERIENCE

### Bytedance

Jun 2020 - Sep 2020

*Research Intern*

*Mountain View, CA*

- Focus on solving state-of-the-art fuzzer Angora's gradient solver local minima and branch collision problem.
- Implemented a compiler plugin in 2000 lines of C++ using LLVM and a new gradient solver in 3000 lines of Rust.
- Improved branch coverage by 41% compared by Angora, 94% compare to other state-of-the-art fuzzers.
- *Valkyrie: Improving Fuzzing Performance Through Principled Techniques* submitted to Euro S&P 2022.

### Bytedance

Sep 2018 - Aug 2019

*Research Intern*

*Beijing, China*

- I was assigned to find integer errors in Bytedance's codebase.
- I designed a sanitizer and implemented it as a runtime plugin using around 1500 lines C++ and 2000 lines of Rust.
- Identified 8 crashing errors that could cause denial of service attack; [CVE-2020-18869](#) and [CVE-2020-18871](#) assigned.
- Found 166 non-crashing errors that could cause program misbehave, reported to developers.
- *IntEgrity: finding integer errors by targeted fuzzing* published on SecureComm 2020.

### ShanghaiTech University

Nov 2017 - Jan 2018

*Lab Intern*

*Shanghai, China*

- By combining line search and trust region, we designed our subproblem algorithm;
- Implemented our algorithm and subproblem algorithm using Python and did extensive experiments;
- *An inexact first-order method for constrained nonlinear optimization* published on *Optimization Methods and Software*

### ABB Group

Oct 2017 - Jun 2018

*Research Intern*

*Shanghai, China*

- ABB group hoped they can give their desktop robot [Yumi](#) the ability to move around.
- We attached Yumi to an 4-wheel robot to make it autonomous.
- I developed **navigation**, **mapping**, and **control transfer state machine** in around 5000 lines of C++.
- I made [demonstration](#) to the leader in ABB.

### STAR Lab, ShanghaiTech

Jun 2017 - Sep 2017

*Lab Intern*

*Shanghai, China*

- Supervised by Prof. Sören Schwertfeger in STAR Lab(Now MARS Lab);
- Investigated on **multi-robot mapping** to help fasten mapping process;
- Used VLP16, tried Gmapping, Cartographer and our modified version.

## Screen++

Jun 2017 - Jun 2017

*Team leader*

*Shanghai, China*

- Proposed an application to connect all the screens in different platforms;
- Responsible for the software development & market model; I also did the final presentation;
- Python & Apache used. Group of 5 and won the **3rd prize** in iLab Hackathon.

## SafeBox

Jun 2017 - Jul 2017

*Team member*

*Shanghai, China*

- Course project for graduate level Operating System, group of 2;
- Implemented a visualization technology to create a sandbox;
- Using *ptrace*, we catch every system call and fail the ones that we consider unsafe.
- Rust & C used on Linux.

## TEACHING

---

### ECS032A: Introduction to Programming

2020 Fall Quarter

Teaching Assistant

*UC Davis*

### CS110: Computer Architecture I

2018 Spring Semester

Leading Teaching Assistant

*ShanghaiTech*

### SI100C: Introduction to Computer Science

2017 Fall Semester

Leading Teaching Assistant

*ShanghaiTech*

### SI100: Introduction to Information Science and Technology

2017 Spring Semester

Teaching Assistant

*ShanghaiTech*

### CS100: Introduction to Programming

2016 Fall Semester

Teaching Assistant

*ShanghaiTech*

## AWARDS

---

### ShanghaiTech President's Scholarship

Nov 2016

### Shanghai Scholarship

Oct 2016

## TECHNICAL STRENGTHS

---

### Programming Languages

Proficient: Rust; Frequent use: C++, C; Knowledgeable: Python

### Frameworks

LLVM