

# CHAO PENG

IF-4.23, Informatics Forum, 10 Crichton Street, Edinburgh, EH8 9AB, United Kingdom

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## EDUCATION

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### University of Edinburgh

Edinburgh, UK

#### PhD in Informatics (Software Engineering)

September 2017 - In progress

Supervised by Dr. Ajitha Rajan

- Fully funded by the School of Informatics Scholarship
- Research fields:
  - Coverage metrics and test case generation for GPU programs,
  - Program analysis of smart contracts,
  - Android GUI testing.

### University of Edinburgh

Edinburgh, UK

#### MSc in High Performance Computing with Data Science

September 2016 - August 2017

- Thesis: FEniCS Performance Investigation and Porting miniDFT to GPU Clusters
- Received Achievement Award of the 6th Annual HPCAC Student Cluster Competition

### Xuzhou University of Technology

Xuzhou, China

#### BSc in Computer Science and Technology

September 2012 - June 2016

- Awarded 2 × National Scholarship by Ministry of Education of China
- Awarded National Encouragement Scholarship by Department of Education of Jiangsu Province
- Awarded Honored Undergraduate of Xuzhou University of Technology
- President of the Student Union of School of Information & Electrical Engineering

## INTERNSHIP EXPERIENCE

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### ByteDance Co., Ltd.

05/07/2021 - Present

*Quality Lab*

*Beijing, China*

- Mentors: Zhao Zhang, Ping Yang
- Duties: Advanced mobile App testing.

### Huawei Edinburgh Research Centre

23/11/2020 - 22/06/2021

*Programming Languages Lab*

*Edinburgh, UK*

- Mentor: Dan Ghica, Head of PL Lab
- Duties: Compiler backend testing and benchmarking. Compiler implementation and optimisation.

### Huawei London Research Centre

28/10/2019 - 28/02/2020

*Hisilicon Kirin GPU Team*

*London, UK*

- Mentor: Graham Connor, Chief GPU Scientist
- Final Appraisal: Excellent
- Duties: Design of the layout of the benchmarking framework, implementation of the build system and cross-platform support, design and implementation of GPU micro-benchmarks.

## RESEARCH PUBLICATIONS

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**6. Chao Peng**, Ajitha Rajan, Tianqin Cai. *CAT: Change-focused Android GUI Testing*. In proceedings of the 37th International Conference on Software Maintenance and Evolution (ICSME 2021) September 2021

**5. Chao Peng**, Ajitha Rajan. *Automated Test Generation for OpenCL Kernels using Fuzzing and Constraint Solving*. In proceedings of the 11th Workshop on General Purpose GPUs 2020 (GPGPU @ PPOPP) February 2020

**4. Chao Peng**, Sefa Akca, Ajitha Rajan. *SIF: A Framework for Solidity Contract Instrumentation and Analysis*. In proceedings of the the 26th Asia-Pacific Software Engineering Conference (APSEC 2019). December 2019

**3. Sefa Akca**, Ajitha Rajan, **Chao Peng**. *SolAnalyser: A Framework for Analysing and Testing Smart Contracts*.

In proceedings of the the 26th Asia-Pacific Software Engineering Conference (APSEC 2019). December 2019  
**2. Chao Peng.** *On the Correctness of GPU Programs.* In proceedings of the 2019 ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2019). July 2019  
**1. Chao Peng, Ajitha Rajan.** *CLTestCheck: Measuring Test Effectiveness for GPU Kernels.* In proceedings of the 22nd International Conference on Fundamental Approaches to Software Engineering (FASE 2019). April 2019

## PROFESSIONAL SERVICE

<b>Program Committee Member</b>	ISSTA 2020 Artifact Evaluation, ISSTA 2021 Artifact Evaluation
<b>Student Volunteer</b>	ETAPS 2019, ISSTA 2019, PLDI 2020
<b>Reviewer</b>	ICSE 2019 SEIP (Software Engineering in Practice) Track

## SKILLS

<b>Languages</b>	Mandarin Chinese - Native English - Proficient German - Basic
<b>Technical Skills</b>	Programming languages: C/C++, Java, Fortran, Python, Kotlin, Rust Parallel programming: OpenMP, MPI, OpenCL, CUDA, SYCL Program Analysis: Java Soot, Clang LibTooling Computer Graphics: OpenGL (ES), Vulkan
<b>Tools</b>	L <sup>A</sup> T <sub>E</sub> X, Git, SVN, CMake, Gradle

## TEACHING EXPERIENCE

<b>MSc Projects</b>	04/18 - 08/18, 04/19 - 08/19
<i>Sub-supervisor for MSc Projects</i>	<i>School of Informatics, University of Edinburgh</i>
Helping supervise the following MSc students for their projects:	
<ul style="list-style-type: none"> <li>Bowen Du: Code coverage measurement for GPU programs</li> <li>Yangning Li: Random test case generation for OpenCL programs</li> </ul>	
<b>Software Testing</b>	01/18 - 04/18, 01/19 - 04/19
<i>Teaching Assistant, Tutor and Marker</i>	<i>School of Informatics, University of Edinburgh</i>
<b>Computer Programming Skills and Concepts</b>	11/17 - 12/17, 12/18 - 01/19
<i>Marker</i>	<i>School of Informatics, University of Edinburgh</i>
<b>Introduction to Java Programming</b>	09/17 - 12/17, 09/18 - 12/18
<i>Demonstrator</i>	<i>School of Informatics, University of Edinburgh</i>
Nominated for Teaching Awards by students of this course	

## SCHOLARSHIPS & HONOURS

SCHOLARSHIPS	
<ul style="list-style-type: none"> <li>School of Informatics Scholarship (fully-funded PhD scholarship)</li> <li>Outstanding Undergraduate Scholarship</li> <li>China National Scholarship of the 2014/15 Academic Year</li> <li>China National Encouragement Scholarship of the 2013/14 Academic Year</li> <li>China National Scholarship of the 2012/13 Academic Year</li> </ul>	<div>04/17</div> <div>06/16</div> <div>11/15</div> <div>11/14</div> <div>11/13</div>
AWARDS	
<ul style="list-style-type: none"> <li>Nomination for Teaching Awards: Best Student Who Tutors Award</li> <li>Certificate of Achievement for Participating in the 6th Annual HPCAC Student Cluster Competition</li> </ul>	<div>02/18</div> <div>06/17</div>

- Distinct Graduate of Xuzhou University of Technology 06/16
- Top Ten Role Models of Learning at Xuzhou University of Technology 03/16
- Jiangsu Province-level Excellent Student Cadre 05/15