

# CHAO PENG

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## EDUCATION

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- University of Edinburgh** **Edinburgh, UK**  
**PhD in Informatics (Software Engineering)** September 2017 - In progress  
• Fully funded by the School of Informatics Scholarship Supervised by Dr. Ajitha Rajan  
• 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: Quality Engineering for ByteDance products.
- Huawei Edinburgh Research Centre** 23/11/2020 - 22/06/2021  
*Programming Languages Lab, 2021 Laboratories* 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, 2012 Laboratories* London, UK  
• Mentor: Graham Connor, Chief GPU Scientist  
• 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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7. Sefa Akca, **Chao Peng**, Ajitha Rajan. *Testing Smart Contracts: Which Technique Performs Best?* In proceedings of the 15th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM 2021) October 2021
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, Go 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> <i>Sub-supervisor for MSc Projects</i>	Apr 18 - Aug 18 and Apr 19 - Aug 19 <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> <i>Teaching Assistant, Tutor and Marker</i>	Jan 18 - Apr 18, Jan 19 - Apr 19 and Jan 21 - Apr 21 <i>School of Informatics, University of Edinburgh</i>
<b>Computer Programming Skills and Concepts</b> <i>Marker</i>	Nov 17 - Dec 17 and Dec 18 - Jan 19 <i>School of Informatics, University of Edinburgh</i>
<b>Introduction to Java Programming</b> <i>Demonstrator</i>	Sep 17 - Dec 17 and Sep 18 - Dec 18 <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>		Apr 17 Jun 16 Nov 15 Nov 14 Nov 13
AWARDS		
<ul style="list-style-type: none"> <li>Nomination for Teaching Awards: Best Student Who Tutors Award</li> </ul>		Feb 18

- Certificate of Achievement for Participating in the 6th Annual HPCAC Student Cluster Competition Jun 17
- Distinct Graduate of Xuzhou University of Technology Jun 16
- Top Ten Role Models of Learning at Xuzhou University of Technology Mar 16
- Jiangsu Province-level Excellent Student Cadre May 15