

Shuai Yuan

Department of Computer Science
National Tsing Hua University
Mobile: 0988473989/(886)988473989
Email: yszheda@gmail.com
Personal Profile: <http://yszheda.github.com>

Education

- Master in Computer Science, National Tsing Hua University, Taiwan, 2014.
- Bachelor in Computer Science and Technology, Zhejiang University, China, 2012.

Honor and Awards

- Scholarship:
 - Second prize of outstanding student scholarship and scholarship for academic, 2008–2009
 - Third prize of outstanding student scholarship and scholarship for academic, 2009–2010
 - Second prize of outstanding student scholarship and scholarship for academic, 2010–2011
- Honor: outstanding student, 2008–2009, 2009–2010, 2010–2011
- Awards:
 - Second prize of Zhejiang Province Calculus Contest, 2009
 - Third prize of Zhejiang University ACM Programming Contest, 2009
 - Second prize of Zhejiang University-Intel Embedded Online Contest, 2010
 - Outstanding thesis paper among undergraduate students, 2012

Current Research Fields

Cloud Computing, Storage System, Erasure Codes

Research Experiences

- Lab member of Large-scale System Architecture (LSA) Lab, National Tsing Hua University, 2012–Current
- Research intern in LRI (Laboratoire de Recherche en Informatique) of the University of Paris XI, France, 2011,10–2012,4
 - Work on “automated constraint verification for databases” under the guidance of Prof. Véronique Benzaken and Prof. Évelyne Contejean.
 - Based on the observation that currently no real database management system (DBMS) have fully support the management of integrity constraints and run-time checking is time-consuming, we have present a compile-time verification strategy based on the weakest precondition and predicate transformer approaches.

- Lab member of Microsoft Visual Perception Laboratory of Zhejiang University, 2010–2012
 - Work on “scene audio recognition of images” under the supervision of Prof. Mingli Song. We apply Probabilistic Latent Semantic Analysis (pLSA) and matching pursuit (MP) algorithms to extract the features of training images and sounds respectively. Then machine learning approach is used to find the corresponding environmental sounds for a newly-input image.

Project Experiences

- GPU-RS: a GPGPU approach to accelerating Reed-Solomon codes for fault-Tolerance in RAID-like system.
 - Written in CUDA C. Source code and some documents are available under GPLv3: <https://github.com/yszgheda/GPU-RSCode>.
 - Achieve a maximum speed-up of approximately 90 over the performance of traditional CPU-based Reed-Solomon Codes.
- assertion-verification: implementation of the thesis “automated constraint verification for databases”.
 - Written in Ocamllex and Ocaml yacc. The source code is available on Github: <https://github.com/yszgheda/assertion-verification>.
- regex-engine: a Boost::regex based engine that support regular expression matching, searching and replacement.
 - This project was part of the Student Research Train Program (SRTP) of Zhejiang University in 2010, and was awarded as outstanding SRTP.
 - My role: a team leader and a programmer.
 - Written in C++. The source code and executable files are available on Google Code: (<http://code.google.com/p/regex-engine/>)

For more projects, please refer to my profile on:

- Github
- Google Code

Skills

- Programming Language: C, C++, Java, Matlab/Octave, Verilog HDL, Shell script(mainly bash), Ocaml.
- Framework/API: Hadoop, OpenGL, CUDA, openCL, etc.
- Operating System: GNU/Linux (Currently an ArchLinux user), Windows.
- Version Control Tools: git, svn, cvs.
- IDE: Eclipse, Visual Studio, Xilinx ISE.
- Documentation: L^AT_EX