Ruoyu Wang

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https://aliceeva.github.io
Age: 21 | Male
undergraduate | Objective: phd

EDUCATION

ShanghaiTech University *Sep 2016 - Graduation Date*
Bachelor Computer Science SIST *Shanghai, China*

- Honors: SIST dean scholarship (2016); Outstanding student (2016, 2017, 2018); Outstanding team leader (2018).
- Relevant Coursework: Computer Architecture III (graduate)(A+); Software Engineering (A+); Parallel Computing (A); Programing Language and Compiler (A).

University of Chicago *Jul 2017 - Aug 2017*
Summer School *Chicago, USA*

- Cross-disciplinary summer school program about visual language.

Unversity of Padova *Aug 2018 - Sep 2018*
Summer School *Italy*

- Cross-disciplinary summer school program across Informatics, Arts and Fundamental Sciences.

RESEARCH EXPERIENCE

AI Accelerators Survey *May 2018 - Nov 2018*
CAD Group

- Reviewed last 10 years AI chips design.
- Evaluated design of Thinker and DaDianNao.

DAC-SDC *Nov 2018 - May 2019*
CAD Group & ZJU

- Designed a yolov3 based object-detection system on TX2.
- Simplified the inference network architecture, especially the output layers.
  - Accelerated the inference from 3fps to 50fps.
- Achieved the 3rd place of the contest in DAC 2019.

Optimizing the Power Efficiency on Multi-core Chips *May 2019 - Aug 2019*
CAD Group

- Revised the experiment of dynamic on-chip capacitance allocation.
- Proposed lose model of static allocation by introducing lose caused by Vdroop.
- Reconstructed experiment code and made it scalable.
- Achieved about 20% efficiency improvement when comparing the static method.

CFTC 2019 AI Acceleration Forum *Jul 2019 - Aug 2019*
CAD Group

- Implemented object-detection inference network for video input flow.
- Guided other teams to set up the demo.
- Communicating with the conference organizers to determine configuration.

NCtrace on Google Trace Data *Jul 2019 - Present*
L.I.O.N. Group

- Designed a NetCDF based large-scale trace data analyzing tool.
- Introduced "Dimension Packing" data model and achieved 7:1 storage size compression so far.
- Accelerated the data extraction time to around 100 times.

PUBLICATIONS

Submitted to TCAD

- Optimizing the Energy Efficiency of Power Supply in Heterogeneous Multicore Chips with Integrated Switched-Capacitor Converters

PROJECT EXPERIENCE

SVD Based Face Recognition *Dec 2017 - Jan 2018*

- Implemented face recognition use SVD method in MATLAB.
- Optimized MATLAB embedded SVD algorithm to achieve higher speed.

pREFA: Presentation Tool for Regular Expressions and Finite Automatons *Sep 2018 - Jan 2019*

- Designed a presentation tool for Regular Expressions(RE) and Finite Automatons(FA) as a Python library which mainly aims at GUI demonstration.
- Adopted "Kamada-Kawai" algorithm to perform automatic human-readable FA graph generation.

HONORS & AWARDS

- SIST Dean Scholarship *Sep 2016*
- Outstanding Student *2016, 2017, 2018*
- Industry Practice Outstanding Team Leader *Sep 2018*
- DAC SDC 3rd Place Group *Jun 2019*

EXTRACURRICULAR ACTIVITIES

Teaching Assistance *Feb 2019 - Aug 2019*

- Computer Architecture 1 TA. Designed the RISC-V assembler and linker project for students.
- Advanced Distributed System (graduate) TA. Cooperated with the professor, designed a distributed file system course project.

Association President *Sep 2016 - Sep 2019*

- Established a calligraphy association at freshman.

Volunteer

- Attended several volunteer activities in conferences.

TECHNIQUE SKILLS

- Programming:
  - C / C++
  - Python
- Software:
  - Matlab
- Latex & HTML5