

# Jessica Ouyang

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**OBJECTIVE** Full-time systems and application software development position.

**EDUCATION** **University of Michigan** *Ann Arbor, MI*

*College of Engineering* *M.S. '12*

- ☐ Rackham Merit Fellow
- ☐ 7.952/8
- ☐ Advanced compilers, operating systems, programming languages, cryptography

*College of Literature, Science and the Arts* *B.S. '10*

- ☐ Phi Beta Kappa
- ☐ 3.968/4
- ☐ Algorithms, architecture, operating systems, computer graphics, object-oriented programming, computational theory, computer game design, internet-scale computing, compilers

<b>TECHNICAL SKILLS</b>	<i>Languages</i>	C/C++/C#, Java, Python, PHP
	<i>Operating Systems</i>	Linux, Android, Windows
	<i>Tools</i>	LLVM, Pin, Robotium, gdb, vagrind, gprof, SVN, git
	<i>Etc</i>	Linux kernel hacking, XNA Game Studio

**INDUSTRY** **Facebook** *Engineering intern* *Jun – Aug '12*  
*Menlo Park, CA*

- Developed new programming language to express and guarantee privacy policies of user data
- Built automated testing framework to evaluate correctness of privacy checks (C++, PHP)

**Bloomberg** *Financial software intern* *May – Aug '09*  
*New York, NY*

- Developed residential mortgage-backed security applications
- Implemented UI (Javascript, C#), computational backend and database API (C/C++)

**General Dynamics Land Systems** *Simulation software intern* *May – Aug '08*  
*Sterling Heights, MI*

- Developed serious gaming software for conceptual tanks
- Designed, implemented collision detection of ground vehicles (Rational Rose, C++)

**Harlan Hatcher Graduate Library** *Technology consultant* *Sept '07 – Mar '10*  
*Ann Arbor, MI*

- Supported Microsoft, Adobe software for university faculty, staff, and students

**RESEARCH** **University of Michigan** *Research assistant* *Fall '10 – Winter '13*

- *Advisor:* Peter Chen
- *Research interests:* Broadly, my research interests lie in operating systems. More specifically, they are on improving the reliability and performance of parallel programs on commodity multicore machines, from servers to mobile devices.

### Projects

- *Region serializability:* providing stronger language-level guarantees to programs with data races with runtime and compiler support on commodity hardware to improve testing and debugging
- *Deterministic replay:* reexecuting scheduling preemptions precisely in a deterministic record and replay system using hardware performance counters; deterministic thread scheduling and performance evaluation of deterministic replay in Android's Dalvik VM
- *Epoch parallelism:* exploring a new execution model as a building block of software transactional memory, stronger concurrency models, and deterministic execution

### Publications

DoublePlay: Parallelizing sequential logging and replay. Kaushik Veeraraghavan, Dongyoon Lee, Benjamin Wester, Jessica Ouyang, Peter Chen, Jason Flinn & Satish Narayanasamy. *The 2011 International Conference on Architectural Support of Programming Languages and Operating Systems (ASPLOS '11)*. Newport Beach, CA, *March 2011*. **Best paper award.**

The journal version of this paper appeared in *ACM Transactions on Computer Systems*, Vol. 30, No. 1, Article 3, February 2012.

### Talks

Epoch parallelism: One execution is not enough. Jessica Ouyang, Kaushik Veeraraghavan, Dongyoon Lee, Peter Chen, Jason Flinn & Satish Narayanasamy. *The 9<sup>th</sup> USENIX Symposium on Operating System Design and Implementation (OSDI '10)* Research Vision session. Vancouver, BC, *October 2010*. **CCC Research Vision 2<sup>nd</sup> place.**

### Posters

The case for region serializability. Jessica Ouyang, Peter Chen, Jason Flinn & Satish Narayanasamy. *The 23<sup>rd</sup> ACM Symposium on Operating System Principles (SOSP '11)* Poster session. Cascais, Portugal, *October 2011*.

**TEACHING** **Introduction to Operating Systems** *Teaching assistant* *Fall '11*

**SERVICE** **Software reading group** *Volunteer* *Fall '10 – Winter '13*

- AWARDS & HONORS**
- Rackham Merit Fellow ('10 – '13)
  - CCC Research Vision Award, 2<sup>nd</sup> ('10)
  - Phi Beta Kappa ('10)
  - Computer Game Showcase, 1<sup>st</sup> ('10)
  - CSE Scholars Scholarship ('07 – '09)
  - Google Puzzle Challenge 1<sup>st</sup> ('08), 2<sup>nd</sup> ('09)
  - James B. Angell Scholar ('08-'09)
  - William J. Branstrom Freshmen Prize ('07)

**INTERESTS** Painting, ballet, knitting, yoga & swimming