Andrea Lottarini

Contact Information	<i>Mobile:</i> 917-724-6458 <i>E-mail:</i> lottarini@cs.columbia.edu	WWW:www.cs.columbia.edu/~lottarini
Research Interests	My research focuses on increasing the energy efficiency of applications running on warehouse scale computing infrastructures. As a doctoral student, and during several internships at various companies, I worked on video transcoding, analytical query processing, information retrieval and machine learning. My work has shown how efficiency can be substantially improved across the Hardware/Software stack in these applications. I am very interested in the development of future warehouse scale systems, and efficient, high	
	performance computing in general.	
Experience	Google X , Mountain View, USA Mentors: Ian Kasprzak and Tammo Spalink	May 2017 - August 2017 Software Engineering Intern
	Google , Mountain View, USA Mentors: Joel Coburn and Parthasarathy Ranganathan	May 2016 - August 2016 Software Engineering Intern
	 Developed a benchmark that characterizes video transcoding at the warehouse-scale (published at ASPLOS 2018). Analyzed the impact of vectorization, GPUs and video features on video transcoding performance. 	
	Google , Mountain View, USA Mentors: Joel Coburn and Parthasarathy Ranganathan	May 2015 - August 2015 Software Engineering Intern
	• Implemented and co-designed a prototype for an FPGA accelerator targeting a core application in Google fleet.	
	Intel Labs , Portland, USA Mentors: Asit Mishra and Debbie Marr	June 2014 - September 2014 Graduate Research Intern
	• Implemented, validated, and integrated a sparse linear algebra accelerator for the widely used LibSVM library.	
	 Università di Pisa, Pisa, Italy Mentor: Marco Vanneschi Implemented a compiler for stencil data parallel compucede in C using either MPI or OpenMP. 	January 2012 - July 2012 Research Assistant tations capable of producing optimized
Publications	 Accelerate with Care: A Case Study of Over-Specialization Andrea Lottarini, João P. Cerqueira, Thomas J. Rep. Ross, Mingoo Seok, Martha A. Kim vbench: Benchmarking Video Transcoding in the Cloud Andrea Lottarini, Alex Ramirez, Joel Coburn, Martha Daniel Stodolsky, Mark Wachsler Network Synthesis for Database Processing Units Andrea Lottarini, Stephen A. Edwards, Kenneth A. B. 	on betti, Stephen A. Edwards, Kenneth A. (IN SUBMISSION) a A. Kim, Parthasarathy Ranganathan, (ASPLOS-18)
	• Q100: The Architecture and Design of a Database Processing Unit Lisa Wu, Andrea Lottarini, Timothy K. Paine, Martha A. Kim, Kenneth A. Ross (ASPLOS-14)	
Education	• P h D Computer Science Columbia University	2012 - Current
	 M.S., Computer Science and Networking, University of (Joint degree with Scuola Superiore Sant'Anna) 	f Pisa July 2012 Graduated with Honors
	• B.S., Computer Science, University of Pisa,	February 2010 Final Score: 110 out of 110
Technical Skills	Python, C, C++, SystemVerilog, Java, SQL, SystemC, OCaml, VHDL, POSIX Altera and Xilinx tool-chains for FPGA development, Synopsys tools for simulation	