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## Parallelizing dynamic sequential programs using polyhedral process networks

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# Curriculum Vitae

Dmitry Nadezhkin was born on 15<sup>th</sup> of July, 1981 in Arzamas-16, USSR. In 2003, he received his Master Degree in Mathematics from the Lomonosov Moscow State University. During his M.Sc. study, Dmitry Nadezhkin worked at designing software targeting high-performance computing systems. In 2006, Dmitry joined the Leiden Embedded Research Center (LERC) which is part of the Leiden Institute of Advanced Computer Science (LIACS) at Leiden University where he was appointed as a research assistant (Ph.D. student). He was involved in the NEVA project which deals with Networks on Chips Design Driven by Video and Distribution Applications, and conducted research in the area of automatic parallelization of program code with dynamic constraints. As a part of his work, he developed a FIFO library that allows to run Polyhedral Process Networks on the IBM Cell multiprocessor platform. The research work culminated in the writing of this Ph.D. dissertation in 2012.



# List of Publications

- Dmitry Nadezhkin, Hristo Nikolov, and Todor Stefanov, “Automated Generation of Polyhedral Process Networks from Programs with Dynamic Loop Bounds”, Accepted for publication in ACM Transactions on Embedded Computing Systems (TECS), vol. x, Issue x, pp. xx - xx, June 2012. Pre-print of the paper can be downloaded from <http://www.liacs.nl/~dmityn/pb/TECS-2011-0228.R1.pdf>
- Dmitry Nadezhkin, Todor Stefanov: “Automatic Translation of While-loop Affine Nested Loop Programs into Polyhedral Process Networks”, In Proc. 9th IEEE Workshop on Embedded Systems for Real-Time Multimedia (ESTIMedia’11), Taipei, Taiwan, October 13-14, 2011.
- Dmitry Nadezhkin, Hristo Nikolov, Todor Stefanov: “Translating Affine Nested Loop Programs with Dynamic Loop Bounds into Polyhedral Process Networks” In Proc. 8th IEEE Workshop on Embedded Systems for Real-Time Multimedia (ESTIMedia’10), Scottsdale, Arizona USA, October 24-29, 2010. **WINNER of the 2010 ESTIMedia Best Paper Award!**
- Dmitry Nadezhkin, Todor Stefanov: “Identifying Communication Models in Process Networks derived from Weakly Dynamic Programs”, In Proc. “10th Int. Conference on Embedded Computer Systems: Architectures, MOdeling, and Simulation (SAMOS’10)”, pp. 372-379, Samos, Greece, July 19-22, 2010
- Dmitry Nadezhkin, Sjoerd Meijer, Todor Stefanov, Ed F. Deprettere, “Realizing FIFO Communication When Mapping Kahn Process Networks onto the Cell” In Proc. “9th Int. Conference on Embedded Computer Systems: Architectures, MOdeling, and Simulation (SAMOS’9)”, pp. 308-317, Samos, Greece, July, 2009
- Sjoerd Meijer, Sven van Haastregt, Bart Kienhuis, Dmitry Nadezhkin: “Kahn Process Network IR Modeling for Multi core Compilation”, Technical Report, Leiden University, 2008