Piotr Przymus

Contact Information

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Personal Information

Date of birth: 02/01/1983
Gender: Male
Home address: Gałczyńskiego 57/35, 87-100 Toruń, Poland

Place of Birth: Toruń
Nationality: Polish

Research Interests

Database systems (NoSQL, relational, object), HPC computing, GPGPU computing, data processing, data mining, pattern recognition systems, operating systems, computer networks.

Scientific Projects

- Water Biomonitoring system (with Applied Hydrobiologi laboratory) – mining of time series data, 2010-2012.
- „New data intensive algorithms and structures for GPU processors" (National Science Centre DEC-2012/07/D/ST6/02483), Project realised at Warsaw University of Technology, 2013-now.

Education

Univeristy of Warsaw, Warsaw, Poland

Ph.D. study at the Faculty of Mathematics and Computer Science **October 2008 – 2014**

- Thesis title: Query Optimization in Heterogeneous CPU/GPU Environment for Time Series Databases
- Emphasis: database systems, data mining and GPGPU computing
- Advisors: dr hab. K. Stencel stencel@mimuw.edu.pl, dr. inż. K. Kaczmarski kaczmars@mini.pw.edu.pl

Nicolaus Copernicus University, Toruń, Poland

M.Sc. study at the Faculty of Mathematics and Computer Science **October 2003 – June 2008**

- Emphasis: database systems
- Advisor: dr P. Wiśniewski, pikonrad@mat.umk.pl

Professional Experience

Nicolaus copernicus university, Toruń, Poland
Teaching and research assistant **2013 – now**
IV Liceum Ogólnokształcące im. Tadeusza Kościuszki (high school), Toruń, Poland
Information technology teacher in a special „University Class" **September 2014 – July 2015**
Turbine Asset Management, Toruń, Poland
Researcher, team leader, algorithmic trading platform research **February 2011 – July 2012**
AImatics Sp. z o.o., Toruń, Poland
Software Developer, python, web **December 2010 – February 2011**
Neko Service, Toruń, Poland
Software Developer, MS SQL, T-SQL, C#, .NET **July 2007 – December 2010**
7bulls.com, Toruń, Poland
Software Developer, MS Analytic Services, Perl, Python, Java, Hibernate **June 2006 – July 2007**

Honours, Scholarships and Awards

- „Best Poster Award", PUMPS 2014 – Programming and Tuning Massively Parallel, Barcelona, Spain, 2014.
- „One of Best Papers of ADBIS workshop on GPUs In Databases", GID 2013.
- Kuyavian-Pomeranian Voivodeship Marshall Scholarship for Ph.D. students „Krok w przyszłość" - fifth edition, Summer 2013
- „Best Paper Award of Future Generation Information Technology", Jeju Island, South Korea, 2011.
- Kuyavian-Pomeranian Voivodeship Marshall Scholarship for Ph.D. students „Krok w przyszłość" - second edition, Summer 2009
- Scientific scholarship for Ph.D.students: NCU 2009/2010.
- Pro-quality scholarship for Ph.D. students: NCU 2012/2013, 2013/2014.

Publications

- K. Kaczmarski , P. Przymus, „Fixed Length Lightweight Compression for GPU Revised". Under review in Journal of Paralell and Distributed Computing, 2016.

- K. Kaczmarski, P. Przymus, and P. Rzążewski, „Improving High-Performance GPU Graph Traversal with Compression", New Trends in Database and Information Systems II Advances in Intelligent Systems and Computing Volume 312, 2015, pp 201-214.
- P. Przymus, K. Kaczmarski and K. Stencel. „A biobjective optimization framework for heterogeneous CPU/GPU query plans", Fundamenta Informaticae, 2014.
- P. Przymus, K. Kaczmarski, „Compression Planner for Time Series Database with GPU Support", „Transactions on Large- Scale Data- and Knowledge Centered Systems", 2014.
- P. Przymus and K. Kaczmarski, „Time series queries processing with GPU support.", In New Trends in Databases and Information Systems, Advances in Intelligent Systems and Computing Volume 241, 2014, pp 53-60.
- P. Przymus and K. Kaczmarski. „Dynamic compression strategy for time series database using GPU." In New Trends in Databases and Information Systems, Advances in Intelligent Systems and Computing Volume 241, 2014, pp 235-244.
- P. Przymus, K. Rykaczewski, R. Wiśniewski, „Zebra mussels' behaviour detection, extraction and classification using wavelets and kernel methods", Future Generation Computer Systems, 2014.
- P. Przymus, K. Kaczmarski and K. Stencel. „A bi-objective optimization framework for heterogeneous CPU/GPU query plans." CEUR Workshop Proceedings – Proceedings of the 22nd International Workshop on Concurrency, Specification and Programming, Warsaw, Poland, 2013.
- P. Przymus, K.Kaczmarski, „Improving efficiency of data intensive applications on GPU using lightweight compression", On the Move to Meaningful Internet Systems: OTM 2012 Workshops, Lecture Notes in Computer Science, Vol. 7567, 2012.
- P. Przymus, K. Rykaczewski, „Application of wavelets and kernel methods to detection and extraction of behaviours of freshwater mussels", Future Generation Information Technology, Lecture Notes in Computer Science, Vol. 6485, 2011.
- A. Boniewicz, M. Burzańska, P. Przymus, K. Stencel, „Recursive query facilities in relational databases: a survey", Database Theory and Application, Bio-Science and Bio-Technology, 2010.

Posters

- P.Przymus, K.Kaczmarski, P.Rzążewski, „Lightweight compression algorithms for database systems supported by GPU devices", PUMPS 2014.
- P.Przymus, K.Kaczmarski „Improving efficiency of data intensive applications on GPU using lightweight compression", On the Move to Meaningful Internet Systems 2012.
- P.Przymus, K.Rykaczewski „Extraction and detection of freshwater mussels behaviours, using wavelets and kernel methods", ECMTB 2011.
- P.Przymus, K.Rykaczewski „Recurrence plot analysis of time series derived from observations of Dreissena polymorpha", ECMTB 2011.

Conferences, Workshops and Schools

Conferences

- Third International Workshop on GPUs in Databases (GID 2014), Ohrid, Republic of Macedonia 2014 (**talk**).
- 18th East-European Conference on Advances in Databases and Information Systems (Adbis 2014), Ohrid, Republic of Macedonia, 2014.
- Second International Workshop on GPUs in Databases (GID 2013), Genua, Italy, 2013 (**talk**).
- 17th East-European Conference on Advances in Databases and Information Systems, Genua, Italy, 2013 (**talk**).
- Forum Informatyki Teoretycznej 2013, Toruń, Poland, 2013 (**talk**).
- Concurrency, Specification, and Programming (CS&P) international workshop, Warszawa, Poland, 2013 (**talk**).
- On the Move to Meaningful Internet Systems, Rzym, Italy, 2012 (**talk**, **poster**).
- European Conference on Mathematical and Theoretical Biology (ECMTB), Kraków, Poland, 2011 (**two posters**).
- 2nd Gretl Conference, Toruń, 2011.
- Festyn naukowy FOLCO 2010 Toruń, UMK w Toruniu, 2010.
- MASYW 2010, Tlen nad Wda, UMK w Toruniu, 2010 (**talk**).
- BioInformatics in Toruń (BIT09), Toruń, Poland, 2009.
- Informatyka, Badania i Zastosowania, Kazimierz Dolny, Poland, 2009.
- XXIII Forum Informatyki Teoretycznej Toruń, Zakopane, Poland, 2009 (**talk**).

- Informatyka, Badania i Zastosowania, Kazimierz Dolny, Poland, 2008.

Workshops, schools and other conferences

- PyCon PL 2015, Ossa, Poland (**talk**).
- XII IwE (Computer Science in Education), 2015, Toruń, Poland (**workshop**).
- PyCon PL 2014, Szczyrk, Poland, 2014 (**talk, workshops**).
- Europython 2014, Berlin, Germany, 2014 (**talk**).
- PUMPS 2014 – Programming and Tuning Massively Parallel, Barcelona, Spain, 2014 (**poster**).
- Intel Xeon Phi Workshop, Łodź, Poland, 12.02-13.02.2014.
- PyCon PL 2013, Szczyrk, Poland, 2013 (**talk**).
- On the Move to Meaningful Internet Systems Academy, Rome, Italy, 2012.
- InfoShare 2012, Gdańsk, Poland, 2012.
- PyConPl'11 Mąchocice k/Kielc, Poland 2011 (**talk**).
- „Festyn naukowy FOLCO 2010 Toruń", NCU, Toruń, Poland.
- Summer School on Dynamical Systems, Goettingen, Germany, 2009.
- PyConPl'09, Ustroń - Jaszowiec, Poland 2009.
- Forum obiektowych baz danych, Zbiczno, Poland 2009 (**two talks**).

Teaching Experience

University Courses Modern Databases Systems, Scalable data processing algorithms and methods, Massive data sets mining and processing algorithms, Programming mobile applications: Android, Computer networks, Modern networks systems, Selected computer science applications, Operating systems, Software engineering, Introduction to multitasking operating systems.

Information technology teacher in special „university class" **September 2014 – now**
IV Liceum Ogólnokształcące im. Tadeusza Kościuszki (high school), Toruń, Poland

Other teaching activities
Linux System Administration (2009/2010), Linux Networking and Security Administration (2009/2010).

Other professional activities

Chair of New data mining methods seminar	**2015 - now**
Committee for the computer science study program.	**2011 - 2012**
PhD student council representative.	**2009 - 2010**

Languages

Polish (native), *English* (fluent TOEFL iBT 102/120 points), *German* (basic), *French* (basic).

Skills

Scientific: (Massive) data mining, databases, time series, machine learning
Programming languages: Python (with scientific stack), C/C++, CUDA-C, (z/ba)sh, SQL, Java, Android Java, Awk, Perl, R
Distributed and parallel computing: MapReduce (Spark, Hadoop), GPGPU

Memberships

Computer Science students association	**2005 – 2009**
TGD.NET	**2008 – 2009**
Toruń Linux User Group	**2002 – 2003**