Wojciech Waga

Curriculum Vitae

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Education

2007–2012 **Ph.D.**, *University of Wrocław*, *Department of Genomics*, Wrocław.

2002–2007 **M.Sc.**, *University of Wrocław*, *Institute of Computer Science*, Wrocław.

Master thesis

title *Computer modelling of evolutionary processes.*

supervisors Dr Wojciech Bożejko

Doctoral thesis

title *Computer modelling of the phenomena accompanying a complementation of haplotypes.*

supervisors Prof. dr hab. Stanisław Cebrat

Achievements

- Best poster prize at COST MP0801 Second Annual Meeting May, 26 – 29, 2010
- Dean's award for best PhD students, 2010

Experience

2021-now **Sr. Software Architect**, *DXC/Microsoft*, Wrocław.
Working on a cloud-native 5G core network on Azure. *(details covered by an NDA)*

2013–2021 **Solution Architect (VP)**, *Credit-Suisse*, Wrocław.
Redesigning of ~20 year old banking system with enormous maintenance cost. The objectives were to drive down the *TCO* by reducing the amount of required resources without sacrificing performance and functionality, adding widely available *API* for onboarding new client platforms, adding backup and point-in-time restore to allow for analyses on olded dates and a high-availability with hot spares. The new product had to be cloud ready as the Bank was starting transition to a public cloud at the time. My second task was a design of an operational data store, a brand new product in credit risk architecture landscape. The *ODS* was meant to be a data exchange platform facilitating data transfers between systems with various needs and often incompatible interfaces. It allowes clients to subscribe for notifications to track data changes at chosen granularity level, it does data versioning by default as well as has a builtin search engine. *ODS* is able to consume a wide variety of data as long as they were representable in the *JSON* format. The system is backed by a replicated *NoSQL* database (*MongoDB*) to keep availability at a decent level. *REST* endpoint updates and usually a database upgrade can be made with zero downtime thanks to smart load balancing and replication.

2012–2013 **C++ application developer**, *Credit-Suisse*, Wrocław.
C++ programmer responsible for credit risk management system–*INSIGHT*. *INSIGHT* is a batch processing system that loads daily trades from all over the world and computes bank's exposures to all counterparties. As trading volume keep rising there is constant need to improve performance and lower memory footprint to meet the SLA. *INSIGHT* is based on technologies like *C++11*, *Boost*, *Sybase*, *Multithreading*

2009–2012 **Computer programmer**, *WCSS*, Wrocław.
C++ programmer in a team of three people developing an open-source, fully extendible network alert correlation framework–*ACARM-ng*: `www.acarm.wcss.wroc.pl`. *ACARM-ng* is a distributed system that gathers information from Snort-like *IDS* (*Intrusion Detection System*) finds patterns and presents them to system admins or takes autonomous action.

2008–2009 **Computer programmer**, *WCSS*, Wrocław.
C developer for *NDS - National Data Storage*: `nds.psnc.pl`, a fully distributed parallel file system with automatic replica management, data compression and encryption.

2008–2009 **Junior IT specialist**, *PSNC*, Poznań.
Preparing specifications for the *PRACE* project: `www.prace-project.eu`.

2007–2008 **System administrator**, *WCSS*, Wrocław.
Administration of a 500+ nodes computer cluster running Linux operating system at the biggest data centre in lower silesian region – Wroclaw Centre for Networking and Supercomputing

Languages

Polish **native speaker**
English **C1** *CAE Certificate*
French **A1**

Skills

MongoDB	expert	Linux/Bash	very good
Docker	very good	Scrum	good
AWS	preparing for certification	microservices	very good
JavaScript	good	SQL	good
git	very good	Jira	very good
networking	good	storage	very good

Hobby

- IoT
- Hiking
- Mountain biking
- DIY

Papers

Bartłomiej Balcerek, Bartosz Szurgot, Mariusz Uchroński, and Wojciech Waga. Acarm-ng: Next generation correlation framework. *Lecture Notes in Computer Science*, 7136:114–127, 2012.

Stanisław Cebrat, Dorota Mackiewicz, and Waga Wojciech. Komputerowe modelowanie ewolucji genomów. *KOSMOS*, 58:29–41, 2009.

Stanisław Cebrat, Dietrich Stauffer, and Wojciech Waga. The role of haplotype complementation and purifying selection in the genome evolution. *to be published in Advances in Complex Systems*, 2012 (arXiv:1007.3357).

Jakub Kowalski, Wojciech Waga, Marta Zawierta, and Stanisław Cebrat. Phase transition in the genome evolution favors nonrandom distribution of genes on chromosomes. *International Journal of Modern Physics C*, 20(8):1299–1309, 2009.

Dorota Mackiewicz, Marta Zawierta, Wojciech Waga, and Stanisław Cebrat. Genome analyses and modelling the relationship between coding density, recombination

rate and chromosome length. *Journal of Theoretical Biology*, 267(2):186–192, 2010 (arXiv:1001.5309).

Bartosz Szurgot, Mateusz Uchronski, and Wojciech Waga. C++0x. część 1 (auto, constexpr, variadic templates). *Programista*, 9:24–31, 2011.

Bartosz Szurgot, Mateusz Uchronski, and Wojciech Waga. C++0x. część 2 (initializer list, smart pointers). *Programista*, 10:20–33, 2011.

Bartosz Szurgot, Mateusz Uchronski, and Wojciech Waga. C++0x. część 3 (rvalue reference). *Programista*, 11:20–31, 2011.

Bartosz Szurgot, Mateusz Uchronski, and Wojciech Waga. C++0x. część 4 (lambda). *Programista*, 12:24–28, 2011.

Bartosz Szurgot, Mateusz Uchronski, and Wojciech Waga. C++0x. część 5 (std::thread, std::mutex). *Programista*, 2:19–29, 2012.

Wojciech Waga, Dorota Mackiewicz, Marta Zawierta, and Stanisław Cebrat. Sympatric speciation as intrinsic property of the expanding population. *Theory in Biosciences*, 126(2-3):53–59, 2007.

Wojciech Waga, Marta Zawierta, and Stanisław Cebrat. Modelling the evolution of spatially distributed populations in the uniformly changing environment - sympatric speciation. *to be published in Advances in Complex Systems*, 2012 (arXiv:0911.0814).

Wojciech Waga, Marta Zawierta, Jakub Kowalski, and Stanisław Cebrat. Darwinian purifying selection versus complementing strategy in monte-carlo simulations. *From Genetics to Mathematics*, 79:71–102, 2009.

Marta Zawierta, Wojciech Waga, Dorota Mackiewicz, Przemysław Biecek, and Stanisław Cebrat. Phase transition in sexual reproduction and biological evolution. *International Journal of Modern Physics C*, 19(6):917–926, 2008.

Conferences

Bartłomiej Balcerek, Bartosz Szurgot, Mariusz Uchroński, and Wojciech Waga. Acarm-ng - an Intrusion Protection System for HPC and Grid Environments. In *International Supercomputing Conference, ISC'11*, Hamburg, Germany, 2011.

Stanisław Cebrat, Wojciech Waga, and Marta Zawierta. Non-monotonous relation between fecundity and kinship or relation between the crossover rate and inbreeding coefficient. In *The Congress of Biochemistry and Cell Biology*, Olsztyn, Poland, 2009.

Stanisław Cebrat, Wojciech Waga, Marta Zawierta, and Dorota Mackiewicz. Interplay between inbreeding and intragenomic recombination responsible for sympatric speciation. In *Genetic and Biological Networks, ECCS '07*, Dresden, Germany, 2007.

Stanisław Cebrat, Marta Zawierta, and Wojciech Waga. Modelling the evolution of eukaryotic chromosomes. In *Polish-Russian Biotechnology Symposium*, Moscow, Russia, 2008.

Stanisław Cebrat, Marta Zawierta, and Wojciech Waga. Modelling the relation between kinship and fertility. In *12th volutionary Biology Meeting*, Marseille, France, 2008.

Stanisław Cebrat, Marta Zawierta, and Wojciech Waga. Phase transition in the biological evolution. In *Evolution and Physics, Concepts, Models and Applications*, Bad Honnef, Germany, 2008.

Stanisław Cebrat, Marta Zawierta, Wojciech Waga, Katarzyna Bońkowska, and Dorota Mackiewicz. The role of kinship in the fertility and genome and population evolution. In *European Conference Mathematical and Theoretical Biology*, Edinburgh, Scotland, 2008.

Dorota Mackiewicz, Wojciech Waga, and Stanisław Cebrat. Computer modeling of genome evolution during sympatric speciation. In *Global versus local dynamics on networks, ECCS '07*, Dresden, Germany, 2007.

Wojciech Waga. Analysis of kinship networks in a simulated population. In *Second complex systems summer school*, Paris, France, 2008.

Wojciech Waga. Moving story - rvalue reference i move semantics w c++11. In *Wrocław C++ Users Group*, Wrocław, Poland, 2013.

Wojciech Waga and Stanisław Cebrat. How the local, limited interactions affect the evolution? In *tatistical physics of social dynamics: opinions, semiotic dynamics, language*, Erice, Italy, 2007.

Wojciech Waga and Stanisław Cebrat. Sympatric speciation in populations distributed in uniformly changing environments. In *Physics of Competition and Conflicts*, Rome, Italy, 2009.

Wojciech Waga and Stanisław Cebrat. Computer modelling of biological conflicts in human reproduction. In *COST MP0801 Second Annual Meeting*, Nesebar, Bulgaria, 2010.

Wojciech Waga and Stanisław Cebrat. Modelling an evolution of spatially distributed populations in a uniformly changing environment - sympatric speciation. In *European Conference on Complex Systems*, Vienna, Austria, 2011.

Wojciech Waga, Dorota Mackiewicz, Marta Zawierta, Katarzyna Bońkowska, and Stanisław Cebrat. Inbreeding and crossover rate determine space for life. In *Second European PhD Complexity*, Torino, Italy, 2007.

Wojciech Waga, Dorota Mackiewicz, Marta Zawierta, and Stanisław Cebrat. Modeling the genetic phenomena responsible for sympatric speciation. In *Statphys*, Genoa, Italy, 2007.

Marta Zawierta, Wojciech Waga, and Stanisław Cebrat. Sympatric speciation in panmictic population. In *01. WE-Seminar on Evolution and Physics - Concepts, Models and Applications*, Bad Honnef, Germany, 2008.