

CURRICULUM VITAE
DR. ROBERT NOWOTNIAK

PERSONAL DETAILS



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FORMAL EDUCATION

2015 **PhD degree in Information Technology, Institute of Applied Computer Science**
Faculty of Electrical, Electronic, Computer and Control Engineering,
Łódź University of Technology (TUL). Cum laude (Graduated with Honours)
PhD thesis: „*Analysis of quantum-inspired evolutionary algorithms*” (in Polish)

2008 **MSc (Eng.) in Computer Science, Institute of Information Technology**
Faculty of Technical Physics, Computer Science and Applied Mathematics, TUL
Master’s thesis: „*On the evolutionary design of quantum algorithms*” (in Polish)

PROFESSIONAL EXPERIENCE

2013 – 2021 **Citibank Europe PLC**
VP of Global Grid / High Performance and Cloud Computing SME

- Supporting HPC applications in **AWS (EC2, AutoScaling, KMS, VPC, SGs, ...)**
(clients: Simpliciti G10 Rates, Commodities, Simpliciti-Options; 25k+ cores)
- Generating AMIs for AWS HPC Grid using **awscli** and AWS Python **boto3** library
- Automating AWS Grid management with **DevOps tools: Ansible, Salt, Chef**
- Generating **Docker** images for HPC Grid Team purposes (e.g. Jupyter, Grafana)
- Onboarding new applications to **Grid SOA** architecture (**C#, Java, Python, C/C++**)
- Supporting IBM Platform / Spectrum Symphony 6.1.1, 7.x grid middleware
- Working with vendors: IBM, AWS, SaltStack

2008 – 2012 **Institute of Applied Computer Science, Łódź University of Technology**
Research fellow. Doing scientific research on the field of Artificial Intelligence (genetic and evolutionary algorithms); Giving lectures and teaching labs in courses:

- Network programming – **C#, .NET**
- Operating systems – **bash, sed/AWK, C, Perl, Python**
- Programming in Scripting Languages – **Python**

2005 – 2013 **Robert Nowotniak Computing** - owner
Full-stack B2B IT contracts for local universities (National Film School in Łódź), national sport clubs, automotive companies (Volkswagen Motor Poland):

- Content Management Systems – dedicated solutions development (**PHP, MySQL**)
- Online, distributed and remote sale systems – development (**C#, PHP, PostgreSQL**)
- Systems and databases – administration (**Debian Linux, PostgreSQL**)
- Image processing applications for automotive – development (**Java J2SE**)

INFORMATION TECHNOLOGY SKILLS & HANDS-ON EXPERIENCE

CLOUD TECHNOLOGIES	Amazon Web Services: AWS EC2, VPC, ASG, KMS, S3, Lambda, ECS
HPC TECHNOLOGIES	Grid Computing (IBM Symphony Platform), GPGPU (NVidia CUDA™)
DEVOPS TOOLS	Ansible, SaltStack, Chef
PROGRAMMING LANGUAGES	C, C++, C# (.NET), Java (J2SE), Python , SQL
SYSTEM PROGRAMMING	C, sed, AWK, sh/bash, GNU coreutils
OPERATING SYSTEMS	GNU/Linux (RHEL 6/7, Debian, ArchLinux), Microsoft Windows
DATABASES	MySQL, PostgreSQL, SQLite, Oracle
VERSION CONTROL	RCS, CVS, Subversion, git , BitBucket
SCIENTIFIC SOFTWARE	L ^A T _E X, PyCUDA, Cython, Numerical Python, pandas, Jupyter
VIRTUALIZATION	VirtualBox, vserver, chroot, Docker , Docker-composer

RECENT COMPLETED TRAININGS

2019	Containers, Kubernetes and RedHat OpenShift Administration I (DO286)
2019	Automation with Ansible and Ansible Tower (DO410)
2018	SaltStack administration
2017	Architecting on AWS
2017	Red Hat RHCSA Rapid Track Course, RHEL7 (RH199)
2015	Red Hat System Administration level II (RH134), level III (RH294)

AWARDS AND SCHOLARSHIPS

2009	Scholarship supporting PhD students' innovative research
2008	Prize in Transition Technologies Hi-Tech best master's thesis competition
2006	Prize in Student Best Project competition (Czestochowa University of Technology)

OTHER ACTIVITIES

2009-2012	Organizing Committees member of Scientific Conferences
2006–2008	Chairman of Quantum Computing Students Scientific Group

FOREIGN LANGUAGES

ENGLISH	Fluent in reading, speaking and writing
POLISH	Native

REFERENCES

Doue I. Lee, Citi – Automation Platform Services Manager
Justin Liao, Citi – HPC Grid Services Manager
Ananth Potnis, Citi – ex-Grid Team Manager
Prof. Jacek Kucharski – Head of Institute of Applied Computer Science, TUL

1. **Nowotniak, R.** Kucharski, J., Higher-Order Quantum-Inspired Genetic Algorithms, Proceedings of Federated Conference on Computer Science and Information Systems, Warsaw, 2014
2. **Nowotniak, R.**, Kucharski, J., GPU-based Tuning of Quantum-Inspired Genetic Algorithm for a Combinatorial Optimization Problem, Bulletin of The Polish Academy of Sciences, Technical Sciences, Vol. 60, No. 2, 2012, ISSN 0239-7528 (ISI Thomson Journal List)
3. **Nowotniak, R.**, Kucharski, J., Convergence analysis of Quantum-Inspired Evolutionary Algorithms based on Banach fixed point theorem, Proceedings of the 2012 FIMB PhD students conference
4. Romanowski, A., **Nowotniak, R.**, Kawecki, K., Jaworski, T., Chaniecki, Z., Grudzień, K., Evolutionary algorithms approach for cutting stock problem, Scientific Bulletin of Academy of Science and Technology, Automatics, 2012
5. **Nowotniak, R.**, Kucharski, J., Meta-optimization of Quantum-Inspired Evolutionary Algorithm, 2010, Proceedings of the XVII International Conference on Information Technology Systems, ISBN 978-83-7283-378-5
6. **Nowotniak, R.**, Meta-optimization of Quantum-Inspired Evolutionary Algorithms in The Polish Grid Infrastructure, Proceedings of the 2nd Scientific Session of TUL PhD Students, 2012, ISBN 978-83-7283-490-4
7. **Nowotniak, R.**, Kucharski, J., Building Blocks Propagation in Quantum-Inspired Genetic Algorithm, 2010, Scientific Bulletin of Academy of Science and Technology, Automatics, 2010, ISSN 1429-3447
8. **Nowotniak, R.**, Survey of Quantum-Inspired Evolutionary Algorithms, 2010, Proceedings of the FIMB PhD students conference, ISSN 2082-4831
9. **Nowotniak, R.**, Kucharski J., GPU-based Tuning of Quantum-Inspired Genetic Algorithm for a Combinatorial Optimization Problem, XIV International Conference System Modelling and Control, 2011, ISBN 978-83-927875-1-8
10. **Nowotniak, R.**, Quantum-Inspired Evolutionary Algorithms in Search and Optimization, Proceedings of the 1st Scientific Session of TUL PhD Students, ISBN 978-83-7283-411-9
11. **Nowotniak, R.**, Kucharski J., GPU-based massively parallel implementation of metaheuristic algorithms, Przetwarzanie i analiza sygnałów w systemach wizji i sterowania, Słok, 2011
12. **Nowotniak, R.**, Draus C., Nowak M., Rybak G., Modelling Reality In Visual Python, INotice 2011, ISBN 978-83-7283-407-2
13. Jeżewski, S., Łaski, M., **Nowotniak, R.**, Comparison of Algorithms for Simultaneous Localization and Mapping Problem for Mobile Robot, 2010, Scientific Bulletin of Academy of Science and Technology, Automatics, ISSN 1429-3447
14. Jopek, Ł., **Nowotniak, R.**, Postolski, M., Babout, L., Janaszewski, M., Application of Quantum Genetic Algorithms in Feature Selection Problem, 2009, Scientific Bulletin of Academy of Science and Technology, Automatics, ISSN 1429-3447