

Curriculum vitae

PERSONAL INFORMATION



Piotr Wydrych

📍 Krakow (Poland)

🌐 <http://wydrych.net/> <https://www.linkedin.com/in/piotrwydrych>

PERSONAL STATEMENT

A soon-to-be PhD in Telecommunications. Outstanding researcher focusing on solving real-life problems. Technical leader and experienced software developer.

Expert in overlay networking, application-layer traffic optimization (ALTO), IP routing, software-defined networking (SDN), and Java coding.

Addicted to constant skills development. New technology enthusiast. Willing to serve the Internet community by contributing to IETF, RIPE, NANOG, PLNOG etc.

Upon request I'd be glad to present:

- A reference letter from a professor working at a renowned European university
- A list of references (names, affiliations, and e-mail addresses) from renowned universities and telecom companies
- Copies of the most important publications

WORK EXPERIENCE

Apr 2013–Present

Researcher / Full-Stack Developer

Jagiellonian University, Institute of History / Archive of the Jagiellonian University, Krakow (Poland)

- Working within "Corpus Academicum Cracoviense. Electronic database of students and professors at the University of Krakow in the period 1364-1780" project (funded by the Polish Ministry of Science and Higher Education under the National Program for the Development of Humanities)
 - Leading development team
 - Defining, designing, implementing, deploying, and testing a complete Spring-based web application - full-stack development
 - Linux server administration

Aug 2012–May 2016

Network Operations Engineer

AGH University of Science and Technology, Department of Telecommunications, Krakow (Poland)

- IPv4 and IPv6 network planning
- Deployment and configuration of networking devices
- DNS configuration
- Server administration

Oct 2009–Present

Resarcher / PhD Candidate

AGH University of Science and Technology, Department of Telecommunications, Krakow (Poland)

- Teaching BGP
- Research:
 - Internet traffic engineering
 - Overlay-generated traffic management (incl. P2PTV)
 - Reducing IP transit costs incurred by ISPs

- Improving quality of experience perceived by end-users
- Estimating popularity of voluntary optimization service among users on the basis of a mathematical model with feedback
- Assessing the quality of experience perceived by end-users and its change depending on network conditions
- Implementing a solution for dynamic traffic management between data centers to minimize total IP transit cost incurred by operators
 - Extending Floodlight SDN controller
 - Mechanism verified in hardware and software test-beds located at AGH University, Poznan Supercomputing and Networking Center (Poland), Technische Universität Darmstadt (Germany), and Interoute Italy
- Most important recent projects:
 - "SmartenIT - Socially-aware Management of New Overlay Application Traffic combined with Energy Efficiency in the Internet" (funded by EU), November 2012 - December 2015
 - Co-preparing the project proposal
 - Editing Deliverable D2.1 "Report on Overview of Overlay Traffic Management Solutions"
 - Designing, developing, and testing traffic management solutions for inter-DC traffic
 - Leading development team at AGH University
 - Intensive continuing education course (lecture, hardware lab) commissioned in AGH University by one of the world's leading manufacturers of telecommunications solutions for their employees - the course (tailored to the needs of the client) included advanced network issues, March 2015 - February 2016
 - Negotiating the course content with the client
 - Teaching BGP, WAN, and multicast in IP networks
 - "Development and standardization of Application Layer Traffic Optimization (ALTO) Protocol extensions" (funded by AGH University) May - December 2015
 - Leading development (and editing) of two Internet-Drafts: "Inter-ALTO Communication Problem Statement" and "Paths Extension for the ALTO Protocol"

Sep 2008–Jun 2009 **Probationary teacher**

AGH University of Science and Technology, Department of Telecommunications, Krakow (Poland)

- Teaching MPLS, ATM, and Perl

Jul 2007–Aug 2007 **Trainee – system and network engineer**

Motorola Software Group Poland, Krakow (Poland)

- Writing Perl & bash scripts

Aug 2005–Jul 2007 **Webmaster**

Italicus — Italian bookstore, Krakow (Poland)

Jun 2002–Mar 2005 **Webmaster**

8th Secondary School, Krakow (Poland)

- Creation and development of 8th Secondary School's chemical website

EDUCATION AND TRAINING

24 Aug 2015–4 Sep 2015

"Putting Big Ideas Into Practice: Soft Skills for Large Systems Change" Course

Wageningen UR, Wageningen (Netherlands)

- Strategic level:
 - Competition, Collaboration, Partnerships
 - Systemic Change
- Intrapersonal, interpersonal and team level:
 - Psychology of Change
 - Competencies and Learning in Organizations
- Organizational level:
 - Entrepreneurship
 - Innovation

8 Mar 2010–10 Mar 2010 **“Main Trends in Teletraffic Modelling” Course**
 Universidad Politécnica de Valencia, Valencia (Spain)

15 Feb 2010–19 Feb 2010 **“Introduction to Game Theory and Application” Course**
 Télécom ParisTech, Paris (France)

Oct 2009–Sep 2013 **PhD Studies – Telecommunications**

AGH University of Science and Technology, Department of Telecommunications, Krakow (Poland)

- Thesis title: Optimization of P2PTV-Generated Traffic with QoE-Awareness (defined on May 23, 2013)
 - Supervisor: Prof. Andrzej Jajszczyk, PhD
 - Secondary supervisor: Piotr Cholda, PhD
- Published PhD thesis parts:
 - **P. Wydrych**, K. Rusek, and P. Cholda, "Efficient modelling of traffic and quality of scalable video coding (SVC) encoded streams", IEEE Communications Letters, vol. 17, no. 12, pp. 2372-2375, Dec. 2013. ©IEEE, <http://dx.doi.org/10.1109/LCOMM.2013.110613.132163>
 - **P. Wydrych** and P. Cholda, "Locality- and quality-awareness for P2PTV systems based on scalable video coding (SVC)", in Proc. IEEE Int Communications (ICC) Conf, London, UK, Jun. 2015. ©IEEE. <http://dx.doi.org/10.1109/ICC.2015.7249169>
 - **P. Wydrych** and P. Cholda, "Will P2P users cooperate with ISPs? A word-of-mouth communication approach", in Proc. IEEE Int Communications (ICC) Conf, Ottawa, Canada, Jun. 2012. ©IEEE, <http://dx.doi.org/10.1109/ICC.2012.6363704>
 - Z. Duliński, R. Stankiewicz, **P. Wydrych**, M. Kantor, and P. Cholda, "Cost-driven peer rating algorithm", in Proc. IEEE Int Communications (ICC) Conf, Kyoto, Japan, Jun. 2011. ©IEEE, <http://dx.doi.org/10.1109/icc.2011.5962879>
 - Z. Duliński, **P. Wydrych**, and R. Stankiewicz, "Inter-ALTO communication problem statement", Internet Engineering Task Force, Internet-Draft [draft-dulinski-alto-inter-problem-statement-02](http://www.ietf.org/internet-drafts/draft-dulinski-alto-inter-problem-statement-02), Jul. 2015, work in progress.

Oct 2004–Sep 2009 **MSc Studies – Electronics and Telecommunications**

AGH University of Science and Technology, Department of Telecommunications, Kraków (Poland)

- MSc thesis title: Analysis of Practical Issues Related to Routing in Overlay Networks
 - Supervisor: Piotr Cholda, PhD
- Published MSc thesis parts:
 - **P. Wydrych** and P. Cholda, "ISP-supported traffic reduction for application-level multicast", in Proc. IEEE Int Communications (ICC) Conf, Kyoto, Japan, Jun. 2011. ©IEEE, <http://dx.doi.org/10.1109/icc.2011.5962457>

PERSONAL SKILLS

Mother tongue(s) Polish

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C1
German	B1	B1	A2	A2	A2
French	A1	A1	A1	A1	A1
Spanish	A1	A1	A1	A1	A1
Italian	A1	A1	A1	A1	A1
Slovak	A2	A2	A1	A1	A1
Czech	A2	A2	A1	A1	A1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

- Use of established contacts – networking
 - Inclusion of Alcatel-Lucent Bell Labs France (now Nokia) among the FP7 SmartenIT project partners
- Openness to other disciplines
 - Working in the interdisciplinary (history + IT) project "Corpus Academicum Cracoviense. Electronic database of students and professors at the University of Krakow in the period 1364-1780" (funded by the Polish Ministry of Science and Higher Education under the National Program for the Development of Humanities)

Organisational / managerial skills

- R&D management
 - Leading a team (University of Zurich, Technische Universität Darmstadt, AGH University, Poznan Supercomputing and Networking Center, Interoute Italia) in the preparation of a SmartenIT FP7 project public document "Deliverable D2.1: Report on Overview of Overlay Traffic Management Solutions", January - April 2013
 - Managing the AGH research team in the FP7 SmartenIT project (Work Package 2: Theory and Modeling), January 2013 - March 2014
 - Leading the AGH implementation team in the FP7 SmartenIT project (Task 3.3: Development of Prototype Components), April 2014 - October 2015
 - Managing the AGH standardization team in the FP7 SmartenIT project (Task 5.2: Standardization), November 2012 - October 2015
 - Leading the implementation works in the "Corpus Academicum Cracoviense" project, since April 2013
- Ability to work without supervision in a fast-paced, deadline-driven environment
 - Proved by working in a number of projects with fixed, sometimes very short, deadlines
- Conference co-organizing
 - Krajowa Konferencja Radiokomunikacji, Radiofonii i Telewizji 2016 (National Conference on Radiocommunication, Radio and Television)
 - 2012 IEEE 17th Conference on Emerging Technologies & Factory Automation
 - 24th International Teletraffic Congress
 - 2011 International Workshop on the Design of Reliable Communication Networks
 - Krajowa Konferencja Radiokomunikacji, Radiofonii i Telewizji 2010 (National Conference on Radiocommunication, Radio and Television)
- Preparing the syllabus of the "Heterogeneous Operators Networks" classes for Master degree in ICT course

- Job-related skills**
- Software-Defined Networking
 - Overlay (peer-to-peer) networking, application-layer traffic optimization
 - BGP & OSPF routing (technical & business levels)
 - IP network planning
 - IP traffic analysis
 - TCP/IP, HTTP, DNS, and DHCP configuration
 - Software architecture & development
 - Programming languages (Java, Perl, C/C++/C#, bash)
 - Software development life-cycle, continuous integration (Jenkins), Maven
 - Web architectures (HTML5, CSS3)
 - Team leading
 - Linux administration
 - Typesetting in LaTeX
 - MATLAB
 - Teaching

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Digital competences - Self-assessment grid

Driving licence B

ADDITIONAL INFORMATION**Honours and awards**

- Laureate of a scholarship for AGH University employees pursuing a PhD
- Laureate of the "Transformation.doc" program (funded by the Polish Ministry of Science and Higher Education) - participated in the two-week training course on entrepreneurship and soft skills in Wageningen UR in The Netherlands (one of the best universities in the world in the category of life sciences)
 - An interdisciplinary team which I lead won the prize for the best case study during the course
- Winner of Student Travel Grant for the best doctoral students publishing in ICC 2012 (the flagship conference of IEEE Communications Society)
- Laureate of a doctoral scholarship in the academic year 2011/12
- MSc Thesis was awarded in the competition of the Krakow Branch of the Association of Polish Electrical Engineers

Selected Publications

- Journal article
 - **P. Wydrych**, K. Rusek, and P. Cholda, "Efficient modelling of traffic and quality of scalable video coding (SVC) encoded streams", IEEE Communications Letters, vol. 17, no. 12, pp. 23722375, Dec. 2013. ©IEEE, <http://dx.doi.org/10.1109/LCOMM.2013.110613.132163>
- Book
 - Piotr Pacyna, Norbert Rapacz, Tomasz Chmielecki, Piotr Cholda, Paweł Potrawka, Rafał Staniewicz, **Piotr Wydrych**, and Andrzej R. Pach. "OKIT. Metodyka ochrony teleinformatycznych infrastruktur krytycznych" (OKIT. A methodology for critical information infrastructure protection).

Warszawa, Wydawnictwo Naukowe PWN, 2013. ISBN: 978-83-01-17314-2 (in Polish)

- Book chapter
 - P. Pacyna, T. Chmielecki, P. Potrawka, and **P. Wydrych**. "Założenia i cele metodyki OKIT do wdrażania systemu bezpieczeństwa teleinformatycznego w infrastrukturach krytycznych" (OKIT methodology for critical information infrastructure protection – requirements and objectives). In: Andrzej R. Pach, Zbigniew Rau, and Michał Wagrowski (eds.), Nowoczesne systemy łączności i transmisji danych na rzecz bezpieczeństwa : szanse i zagrożenia. Warszawa, Wolters Kluwer Polska SA, 2013. ISBN: 978-83-264-4255-1
- Conference articles
 - R. Łapacz, J. Gutkowski, Ł. Łopatowski, R. Stankiewicz, K. Wajda, G. Rzym, **P. Wydrych**, and Z. Duliński, "DTM for minimization of inter-domain traffic cost", Proc. TNC15 Networking Conference, Porto, Portugal, Jun 2015. <http://tnc15.terena.org/core/presentation/102>
 - **P. Wydrych** and P. Cholda, "Locality- and quality-awareness for P2PTV systems based on scalable video coding (SVC)", in Proc. IEEE Int Communications (ICC) Conf, London, UK, Jun. 2015. ©IEEE, <http://dx.doi.org/10.1109/LCOMM.2013.110613.132163>
 - **P. Wydrych** and P. Cholda, "Will P2P users cooperate with ISPs? A word-of-mouth communication approach", in Proc. IEEE Int Communications (ICC) Conf, Ottawa, Canada, Jun. 2012. ©IEEE, <http://dx.doi.org/10.1109/ICC.2012.6363704>
 - Z. Duliński, R. Stankiewicz, **P. Wydrych**, M. Kantor, and P. Cholda, "Cost-driven peer rating algorithm", in Proc. IEEE Int Communications (ICC) Conf, Kyoto, Japan, Jun. 2011. ©IEEE, <http://dx.doi.org/10.1109/icc.2011.5962879>
 - **P. Wydrych** and P. Cholda, "ISP-supported traffic reduction for application-level multicast", in Proc. IEEE Int Communications (ICC) Conf, Kyoto, Japan, Jun. 2011. ©IEEE, <http://dx.doi.org/10.1109/icc.2011.5962457>
 - T. Chmielecki, P. Cholda, P. Pacyna, P. Potrawka, N. Rapacz, R. Stankiewicz and **P. Wydrych**, "Enterprise-oriented cybersecurity management," 2014 Federated Conference on Computer Science and Information Systems (FedCSIS), Warsaw, Poland, Sept. 2014. ©IEEE, <http://dx.doi.org/10.15439/2014F38>
- Internet-Drafts
 - P. Wydrych and Fu Q., "Paths Extension for the ALTO Protocol", Internet Engineering Task Force, Internet-Draft [draft-wydrych-alto-paths-00](#), Jul. 2015, work in progress.
 - Z. Duliński, **P. Wydrych**, and R. Stankiewicz, "Inter-ALTO communication problem statement", Internet Engineering Task Force, Internet-Draft [draft-dulinski-alto-inter-problem-statement-02](#), Jul. 2015, work in progress.

Notable Conferences and Meetings

- 16th Polish Network Operators' Group Meeting, Warsaw, Poland, February 29 - March 1, 2016
- SmartenIT project Final Review, Krakow, Poland, January 27-29, 2016
- SmartenIT project final meeting, UZH, Zurich, Switzerland, October 21-22, 2015
- 15th Polish Network Operators' Group meeting, Krakow, Poland, September 28-29, 2015
- 93th Internet Engineering Task Force meeting, Prague, Czech Republic, July 19-24, 2015 – one of the two participants sent by a Polish university among the 1,555 participants
- 2015 IEEE International Conference on Communications, London, UK, June 8-12, 2015
- 92nd Internet Engineering Task Force meeting, Dallas, USA, March 22-27, 2015 – the only participant sent by a Polish university among the 1,449 participants
- 14th Polish Network Operators' Group meeting, Warsaw, Poland, March, 2-3 2015
- 69th RIPE meeting, London, UK, November 1-7, 2014
- 8th SmartenIT project meeting, Julius-Maximilians-Universität Würzburg, Würzburg, Germany, October 1-3, 2014
- 13th Polish Network Operators' Group meeting, Krakow, Poland, September 29-30, 2014 – the only participant directed by a basic organizational unit of a Polish university among 609 participants
- 7th SmartenIT project meeting, Technische Universität Darmstadt, Darmstadt, Germany, March 5-7, 2014
- 12th Polish Network Operators' Group meeting, Warsaw, Poland, March 3-4, 2014
- 59th North American Network Operators' Group meeting, Phoenix, USA, October 7-9, 2013 – the

only participant sent by a Polish university among the 689 participants

- 11th Polish Network Operators' Group meeting, Krakow, Poland, September 30 - October 1, 2013
- 3rd SmartenIT project meeting, AGH University, Krakow, Poland, June 3-5, 2013
- 2nd SmartenIT project meeting, Interoute, Rome, Italy, February 25-27, 2013
- 2012 IEEE International Conference on Communications, Ottawa, Canada, June 10-15, 2012
- 9th Polish Network Operators' Group meeting, Krakow, Poland, October 22-23, 2012
- 2011 IEEE International Conference on Communications, Kyoto, Japan, June 5-9, 2011
- 81st Internet Engineering Task Force meeting, Quebec City, Canada, July 24-29, 2011 – the only participant sent by a Polish university among the 1,244 participants
- 80th Internet Engineering Task Force meeting, Prague, Czech Republic, March 27 - April 1, 2011 – the only participant sent by a Polish university among the 1,317 participants
- 78th Internet Engineering Task Force meeting, Maastricht, The Netherlands, July 25-30, 2010 – one of the two participants sent by a Polish university among the 1,304 participants

Hobbies

- Hiking
- Skiing
- Ski touring
- Reading books

Other notes

Wyrażam zgodę na przetwarzanie moich danych osobowych dla potrzeb niezbędnych do realizacji obecnych jak i przyszłych procesów rekrutacji zgodnie z ustawą z dnia 29 sierpnia 1997 r. o ochronie danych osobowych (tekst jednolity: Dz.U.2014r. poz.1182).

I hereby agree on processing my personal data for the needs of current and future recruitment processes in accordance with the Polish Protection of Personal Data Act of August 29, 1997.