Filip Hanzely

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EDUCATION

Ph.D. Applied Mathematics and Computational Science   Aug '17 – present
King Abdullah University of Science and Technology (KAUST), KSA
Topic: Randomized algorithms for big data optimization
Supervisor: Peter Richtárik

M.Sc. by Research with Distinction, Mathematics and Statistics[1] Sep '16 – May '17
University of Edinburgh, UK
Thesis: Randomized algorithms for minimizing relatively smooth functions
1st supervisor: Peter Richtárik, 2nd supervisor: Lukasz Szpruch

Bc. in Economic and Financial Mathematics   Sep '13 – June '16
Comenius University, Bratislava, Slovakia
Thesis: Analysis of causal relationships in reconstructed phase space
Supervisor: Anna Krakovská

PUBLICATIONS

Accelerated Relative Gradient Descent
Filip Hanzely, Peter Richtárik, Lin Xiao   2017
Near completion

Randomized Methods for Relative Smooth Optimization
Filip Hanzely, Peter Richtárik   2017
Near completion

Privacy Preserving Randomized Gossip Algorithms
Filip Hanzely, Jakub Konečný, Nicolas Loizou, Peter Richtárik, Dmitry Grischenko   2017
ArXiv:1706.07636

Testing for Causality in Reconstructed State Spaces by Optimized Mixed Prediction Method
Anna Krakovská, Filip Hanzely   2016
Physical Review E 94 (5), 052203

AWARDS

Dean's Award   2017 – present
Awarded to a few best incoming PhD students at KAUST

KAUST Fellowship   2017 – present
A generous fellowship provided for PhD students at KAUST

EPSRC CASE Award[2]**, £93,333/3.5 years**   2016 – 2017
Industrial PhD scholarship funded by EPSRC and Amazon

AN70 Travel Grant, CAD$750   2017
Travel support for attending Workshop on Modern Convex Optimization and Applications: AN70, Toronto

PMPML Travel Grant, £600   2016
Travel support for attending NIPS conference, Barcelona

Academic Praise   2015
A praise awarded by Dean of Comenius University; it is received by 2-3 selected students from

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[1] It started off as PhD, however it was changed to M.Sc. as I decided to move to KAUST after first year with my advisor Peter Richtárik

[2] The fellowship was awarded for 3,5 years, however it was cancelled since I decided to move to KAUST after first year of my PhD in Edinburgh. The Amazon part of funding is still in place.

each school of Comenius University every year

Second Prize (102th place out of 324 competitors)   2014
International Mathematics Competition, Blagoevgrad, Bulgaria

9th Place out of 79 competitors   2014
Vít Jarník International Mathematical Competition, Ostrava, Czech republic

Bronze Medal (163rd place)   2013
International Mathematical Olympiad (IMO), Santa Marta, Colombia

Acknowledgement   2013 & 2012
For successful representation of Slovakia by *Minister of Education, Science, Research and Sport of the Slovak Republic*

1st Place   2013
Slovak national round of Mathematical Olympiad for high school students, Košice, Slovakia

Bronze Medal (13th place)   2012
Middle European Mathematical Olympiad, Solothurn, Switzerland

TALKS & POSTERS	**4th Conference on Optimization Methods and Software** Dec '17 Talk: Randomized and Accelerated Algorithms for Minimizing Relatively Smooth Functions (minisymposium organizer) Havana, Cuba
	All Hands Meeting on Big Data Optimization Aug '17 – Nov '17 3 talks at local group seminar (organizer) KAUST, Saudi Arabia
	Workshop on Modern Convex Optimization and Applications: AN70 July '17 Poster: Randomized Algorithms for Minimizing Relatively Smooth Functions Toronto, Canada
	Google Machine Learning Summit June '17 Poster: Randomized Algorithms for Minimizing Relatively Smooth Functions Zurich, Switzerland
	SIAM Conference on Optimization May '17 Talk: Randomized Methods for Minimizing Relatively Smooth Functions Vancouver, Canada
	All Hands Meeting on Big Data Optimization Nov '16 – May '17 3 talks at local group seminar Edinburgh, UK
	Visual Computing - Modeling and Reconstruction Apr '17 Poster: Randomized Algorithms for Minimizing Relatively Smooth Functions KAUST, Saudi Arabia
ATTENDANCE AT CONFERENCES & WORKSHOPS	**Challenges in Optimization for Machine Learning** Mar '17 A technical meeting focused on research in optimization for machine learning Alan Turing Institute, London, UK
	Neural Information Processing Systems (NIPS) Dec '16 Barcelona, Spain
	5th IMA Conference of Numerical Linear Algebra and Optimization Sep '16 Birmingham, UK
PhD TRAINING	**PhD courses - KAUST** Aug '17 – present Qualifying Exams: Numerical Linear Algebra, Probability and Statistics, Partial Differential

Equations
Other: Data Mining

Autumn School on Algorithmic Optimization   Sep '16
Trier, Germany

PhD courses - Edinburgh   Sep '16 – May '17
Convex Analysis and Convex Optimization, Matrix Theory, Modern Optimization Methods for
Big Data Problems, Research Seminar on Big Data Optimization

Mathematics of Machine Learning   Apr '16
One week intensive course focused mostly on optimization taught by a guest from University
of Edinburgh and held in Bratislava, Slovakia

TEACHING

KAUST, Saudi Arabia   Aug '17 – Dec '17
Teaching Assistant, Special Topics in Data Sciences (PhD course)

University of Edinburgh, UK   Feb '17 – Apr '17
Tutor of Engineering Mathematics (undergraduate course) and Modern Optimization Methods
for Big Data Problems (postgraduate course)

**WORK
EXPERIENCE**

Slovak Academy of Sciences, Slovakia   (~30h/m)   Jul – Aug '15, Feb – Jun '16
Research Assistant: designing new methods for causality detection in reconstructed phase space;
continued as my Bachelor thesis.

FinViz, Slovakia   (~70h/m)   Oct '14 – June '15
Part-time C# developer: building automatic detector of stock chart patterns, backtesting trading strategies based on the patterns.

Trojsten NGO, Slovakia   (~30h/m)   May '13 – Aug '16
Volunteer educator, manager: Co-organize competitions and camps (9 one week camps, approx.
35 participants) for talented high school students in mathematics in Slovakia and Czech republic. Gave approx. 45 lectures on different topics, proposed approx. 80 problems and marked
560 solutions. In 2014 and 2015 I was one of 3 leading organizers of math division of Trojsten
(approx. 30 volunteers in the division).

Slovak Mathematical Olympiad   Dec '13 – Jun '16
Coordinator of regional (3 times, approx. 90 solutions marked), national round (2 times, approx
80 solutions marked) and team selection camp (3 times, approx. 60 solutions marked).
Lecturer at preparation camp for IMO and MEMO (5 times 3,5 hour lecture for 12 students).

Tatra Banka, Slovakia   (~70h/m)   Jun '14 – Oct '14
VBA developer: building Excel macros in order to simplify the routine at the project management department.

Gymnázium J. Hronca, Slovakia   (~8h/m)   Sep '13 – Jun '14
Teacher: preparing talented high school students for Mathematical Olympiad (approx. 8 students).

SKILLS

Languages: Slovak (native), English (fluent)
Computer skills Julia, Python, MatLab, C++/C, R, LaTeX, VBA