Martin Drozdík

Curriculum Vitae

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Research interests

- Multi-objective optimization
- Differential evolution
- Computational geometry
- Evolutionary computation in general

Key skills

Mathematics	Algorithm design, graph algorithms, probability theory, statistics.
C++	**6 years** active experience. Deep interest in best practices and C++11/14. Experience with high-performance code and parallelization.
Qt	**3 years** active experience, especially in **GUI** design and implementation.

IT skills

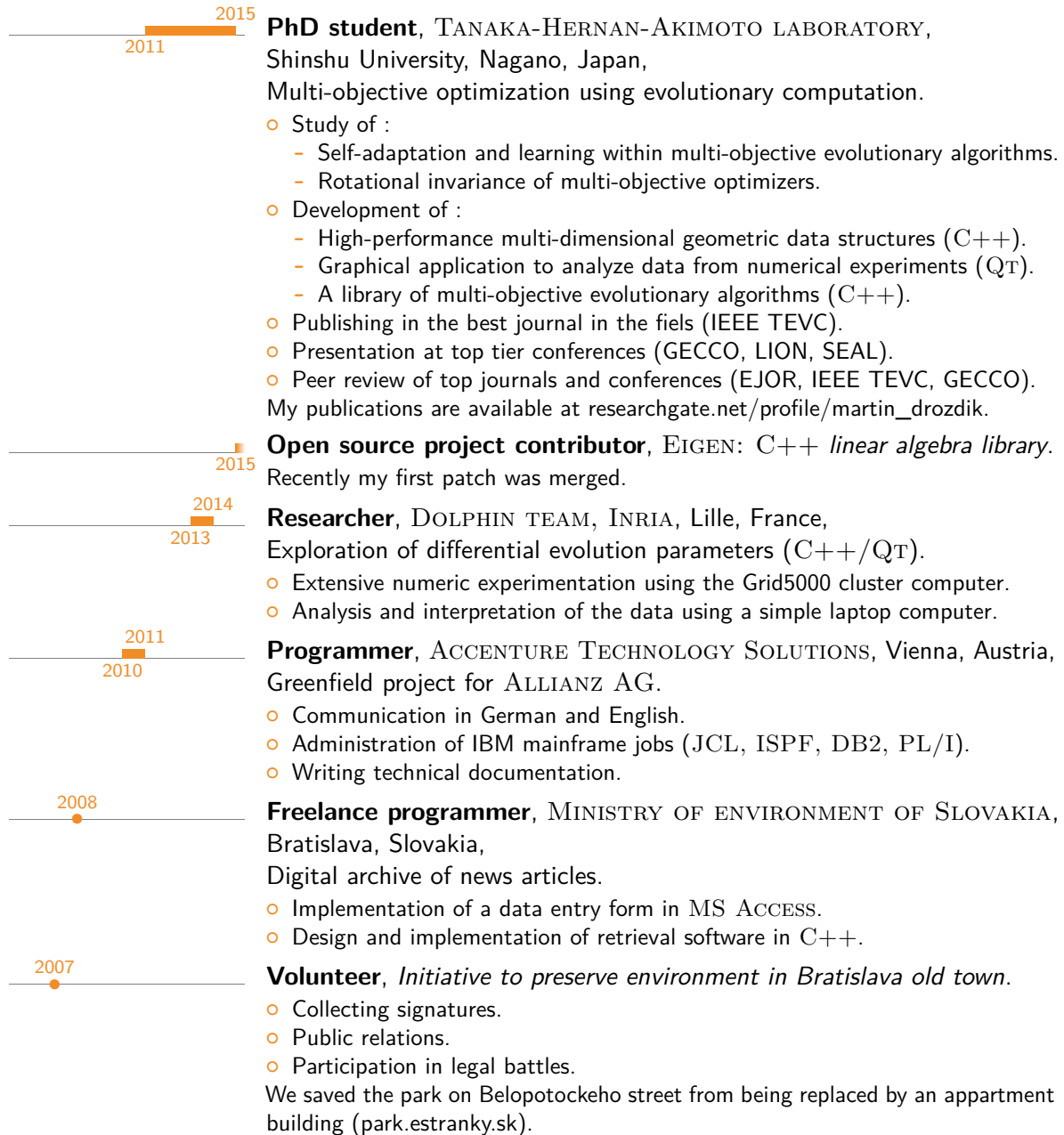|	
Operating systems	Linux / Ubuntu / Bash
Office	Mercurial, LibreOffice, LaTeX, Inkscape
Programming	JavaScript, Matlab / Octave, SQL, R, Eigen, Mathgl
Web develpment	HTML, CSS

Awards and scholarships

2014
2010

2013

2008

2008
2005

Monbukagakusho, *Scholarship of the Japanese Ministry of Education*, Awarded to two students from Slovakia annually to pursue a PhD course.

IEEE Young Researcher Presentation Award, *IEEE Session*, Niigata.

Erasmus, *Full scholarship and tuition for 6 months (University of Pisa)*.

Dean's motivational scholarship, *top 10% of class*, awarded 4 times.

About me

I have a very strong sense of *beauty* and *quality*. I aim for the highest efficiency in everything I do, and I always strive to *do The right thing*.
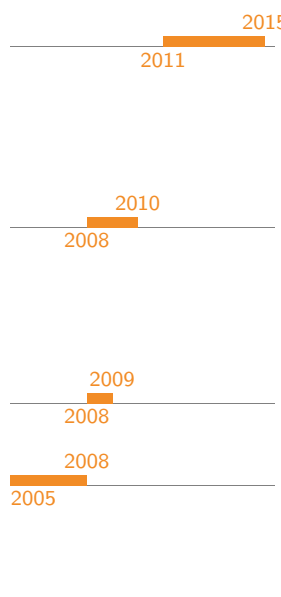
Professional experience

2015
2011

PhD student, Tanaka-Hernan-Akimoto laboratory,
Shinshu University, Nagano, Japan,
Multi-objective optimization using evolutionary computation.
- Study of :
  - Self-adaptation and learning within multi-objective evolutionary algorithms.
  - Rotational invariance of multi-objective optimizers.
- Development of :
  - High-performance multi-dimensional geometric data structures ($C++$).
  - Graphical application to analyze data from numerical experiments (Q_T).
  - A library of multi-objective evolutionary algorithms ($C++$).
- Publishing in the best journal in the fiels (IEEE TEVC).
- Presentation at top tier conferences (GECCO, LION, SEAL).
- Peer review of top journals and conferences (EJOR, IEEE TEVC, GECCO).

My publications are available at researchgate.net/profile/martin_drozdik.

2015

Open source project contributor, Eigen: $C++$ *linear algebra library*.
Recently my first patch was merged.

2014
2013

Researcher, Dolphin team, Inria, Lille, France,
Exploration of differential evolution parameters ($C++/Q_T$).
- Extensive numeric experimentation using the Grid5000 cluster computer.
- Analysis and interpretation of the data using a simple laptop computer.

2011
2010

Programmer, Accenture Technology Solutions, Vienna, Austria,
Greenfield project for Allianz AG.
- Communication in German and English.
- Administration of IBM mainframe jobs (JCL, ISPF, DB2, PL/I).
- Writing technical documentation.

2008

Freelance programmer, Ministry of environment of Slovakia,
Bratislava, Slovakia,
Digital archive of news articles.
- Implementation of a data entry form in MS Access.
- Design and implementation of retrieval software in $C++$.

2007

Volunteer, *Initiative to preserve environment in Bratislava old town*.
- Collecting signatures.
- Public relations.
- Participation in legal battles.

We saved the park on Belopotockeho street from being replaced by an appartment building (park.estranky.sk).

Languages

English	Advanced	10+ years, IT and mathematics terminology.
Japanese	Intermediate	Living in Japan for 3 years, actively studying.
German	Intermediate	8 months on an IT project in Austria.
Italian	Intermediate	Studied mathematics and economics in Italian.
French	Beginner	Actively studying.
Slovak/Czech	Native	

Major publications

2015 M. Drozdik, H. Aguirre, Y. Akimoto, and K. Tanaka
Comparison of Parameter Control Mechanisms in Multi-objective Differential Evolution
Presented at the *LION 9* conference, To appear in *Lecture Notes in Computer Science*.

2014 M. Drozdik, H. Aguirre, Y. Akimoto, and K. Tanaka
Computational Cost Reduction of Non-dominated Sorting Using M-front
In *IEEE Transactions on Evolutionary Computation*.

2014 M. Drozdik, K. Tanaka, H. Aguirre, S. Verel, A. Liefooghe, and B. Derbel
An Analysis of Differential Evolution Parameters on Rotated Bi-objective Optimization Functions
Presented at *SEAL 2014* conference, published in *Lecture Notes in Computer Science, volume 8886.*

2013 M. Drozdik, H. Aguirre, and K. Tanaka
Attempt to Reduce the Computational Complexity in Multi-objective Differential Evolution Algorithms
Presented at the *GECCO 2013 conference*, published in *Proceedings of the 15th Annual Conference on Genetic and Evolutionary Computation.*

Formal education

2015
2011
PhD, Computer Science,
Department of Mathematics and System Development, Shinshu University, Nagano, Japan, Graduating on 25th of March 2015.
Title of thesis : Improvements in Understanding and Performance of Multi-objective Differential Evolution

2010
2008
Master, Applied Mathematics,
Comenius University in Bratislava, Slovakia,
Graduated with honors.
Title of thesis : Stochastic Processes in State Space Form and ML Estimation of Their Parameters

2009
2008
Erasmus exchange student, Mathematics and Economics,
University of Pisa, Italy.

2008
2005
Bachelor, Applied Mathematics,
Comenius University in Bratislava in Bratislava, Slovakia,
Graduated with honors.
Title of thesis : Strange Functions in Mathematical Analysis

Free time

Football   I play regularly.

Videogames   Real time strategy.

Sci-fi literature   Especially Robert Heinlein, Arthur C. Clarke, and Joe Haldeman.