Curriculum vitae

Surname, first name:	Dvořáková (born Balková), Ľubomíra
Date of birth:	September 23, 1980
Nationality:	Czech

Education

May 2008	defence of the doctoral thesis (with honours)
	obtained degree: Ph.D. (doktor in Czech, docteur in French)
2005 – 2008	joint thesis between Czech Technical University (CTU) in Prague
	(specialization: Applied Mathematics)
	and University Paris Diderot – Paris 7
	(specialization: Theoretical Physics)
February 2005	final state exam and defence of the diploma thesis
	obtained degree: Engineer ($\sim$ Master of Science) in Mathematical Engineering
	(excellent grade with honours)
1999 – 2005	Faculty of Nuclear Sciences and Physical Engineering (FNSPE), CTU in Prague
	(specialization: Applied Mathematics)

Honours and Scholarships

May 2013	Laureate of L'Oréal UNESCO Award for Women in Science
December 2009	CTU Rector Prize of the 1st grade for excellent doctoral theses
December 2009	Honourable Mention within Votruba Prize for the best doctoral thesis in Theoretical Physics
2005	Scholarship of the French government for Ph.D. students "en co-tutelle" (under double supervision)
November 2004	Foundation Preciosa scholarship of excellence for students of CTU in Prague
June 2004	McKinsey&Company scholarship for students of technical universities

Research Topics

2008 – present	• theoretical informatics:
	combinatorics on words, non-standard numeration systems
	(collaboration with F. Dolce, K. Medková, E. Pelantová, A. M. Shur, Š. Starosta, O. Turek)
2011 – 2014	• applications of combinatorics on words in cryptology:
	random number generators, dithered hash functions
	(collaboration with M. Bucci, A. De Luca, J. Hladký, S. Puzynina)
2005 – 2008	• mathematical models of quasicrystals, mainly beta-integers,
	combinatorial and arithmetical properties of beta-integers
	(collaboration with Z. Masáková)
	physics of beta-integers (diffraction, Schrödinger operator)
	(collaboration with J.-P. Gazeau)
	• results summarized in the doctoral thesis: *Beta-integers and quasicrystals*
2001 – 2005	• geometrical properties of mathematical models of quasicrystals,
	in particular the Meyer property of cut-and-project sets
	• results summarized in the diploma thesis: *Minimal covering of the difference set*

Professional Experience at the Department of Mathematics, FNSPE, CTU in Prague

- **Associate professor (doc.)** since 2016

- **Assistant professor** since 2008

- **Teaching** since 2002:
    since 2022 guarantor of Didactics of Mathematics
    lectures in Linear Algebra, Cryptology, History of Mathematics, Discrete Mathematics
    tutorials in Linear Algebra and Calculus
    since 2019 co-organizer of Mathematics for life (lectures for highschool mathematics teachers)

- **Supervision of student projects**

2020 – present	Ph.D. thesis: *Substitutive structures in combinatorics, number theory, and discrete geometry* (Jana Lepšová)
2022 – 2023	bachelor project: *String attractors* (Veronika Hendrychová)
2021 – 2022	bachelor project: *Critical exponent of balanced sequences* (Daniela Opočenská)
2019 – 2020	bachelor project: *Antipalindromic numbers* (Stanislav Kruml)
2017 – 2018	master thesis: *Ternary generalized pseudostandard words* (Tereza Veselá)
2015 – 2016	master thesis: *Generalized pseudostandard words* (Josef Florian)
2014 – 2015	bachelor project: *Palindromes and privileged words* (Tereza Velká)
2013 – 2014	bachelor project: *Random number generators and combinatorics on words* (Jakub Hlavnička)
2013 – 2014	bachelor project: *Palindromic closures and palindromes in infinite words* (Josef Florian)
2012 – 2013	bachelor project: *Hash functions and combinatorics on words* (Jan Legerský)
2011 – 2013	bachelor project: *Aperiodic pseudorandom number generators* (Jiří Fiala)
2010 – 2011	bachelor project: *Beta-power series* (Sirui Cheng)

Research Stays

April – May 2014	University of Oulu, Finland (invited by J. Kortelainen)
December 2011	University Paris 7-Denis Diderot, Paris, France (invited by J.-P. Gazeau)
July 2011	Joint Institute for Nuclear Research, Dubna, Russia
September 2010	Faculty of Informatics, Debrecen, Hungary (invited by A. Pethö)

Participation in Conferences

2006 – 2022	lectures at more than 19 international conferences
September 2012	invited lecture at Česko-slovenská MELA (Meeting on Languages) in Telč
May 2012	invited lecture at AM2012 (Applications of Mathematics) in Prague

(Co-)organization of Conferences

2022	Journées Montoises d'Informatique théorique in Prague
2022	university student competition SVOČ in Prague
2011	international conference Words 2011 in Prague
2007 – 2013	student conference Combinatorics on Words
2006 – 2013	Ph.D. student conference Doctoral Days

Grant Investigation

2018 – 2023	member of the research team Theory of the project Centre of Advanced Applied Sciences CAAS
2018 – 2023	member of the research team of the Czech Science Foundation grant GAČR
2013 – 2017	member of the research team of the Czech Science Foundation grant GAČR
2009 – 2012	member of the research team of the Czech Science Foundation grant GAČR
2010 – 2014	principal investigator of the grant of the Student Grant Agency of CTU in Prague for organization of student conferences SVK
2009	principal investigator of the Internal Grant IGS of CTU in Prague
2012 – 2014	guarantor of the Erasmus agreement CTU in Prague – University Paris 7, France
2013 – 2014	guarantor of the Erasmus agreement CTU in Prague – University of Oulu, Finland

Membership

2014 – 2018 and 2022 – present	Executive Committee of Czech Mathematical Society
since 2015	Member of Editorial Board of journal Pokroky matematiky, fyziky a astronomie
since 2014	Organizing Committee of Mathematical Olympiad in Prague
since 2011	Union of Czech Mathematicians and Physicists
2012 – 2014	Academic Senate of FNSPE CTU in Prague

Popularization of Mathematics

editor-in-chief for mathematics of journal for highschool students Rozhledy matematicko-fyzikální
lectures for high school students and teachers, public lectures, popularization papers
involved in student scientific competitions (SOČ, Amavet, Pangea) as supervisor and jury member
former main administrator of the web for high school students jaderka.cz

Languages

English (fluent), French (certificate DALF C1), German (theoretical knowledge), Slovak (fluent), Czech (mother tongue)