ANDREY KULUNCHAKOV

PERSONAL INFORMATION

Born in Russia, 21 years old

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GOAL

Improve my skills in creating and developing cuttind edge projects. Find a way to apply scientific approaches in solving practical problems.

EDUCATION

2015-2017   School of Data Analysis, Yandex

I entered one of the best school for data scientists in Russia in the year of very high competitive selection. There I will cognize brand new tools in such areas as Data Science, Big Data and Computer Science.

2013-2017   Department of Intelligent Systems

Bachelor of Computer Science

This department gives a knowledge of theory and practical methods in Data Science. My scientific papers came as a result of working there. Many approaches to processing and analysis of data were cognized on the lectures in the department.
Advisors: Prof. Vadim STRIJOV & Assoc. Prof. Konstantin VORONTSOV

2011-2017   Moscow Institute os Physics and Technology

Bachelor of Applied Mathematics

There I've been getting the main tools of modern mathematics needed to solve practical problems. The things I've been learning here have already come in handy for many developed projects and written scientific papers.

Summer, 2010   Advanced Educational Scientific Center of MSU

Diploma, II degree

This event was held for invited mathematicians from all over the Russia. We listened to lectures by outstanding scientists and then competed in solving problems. Event was held by the Moscow State University

PUBLICATIONS

2015   Generation of simple structured ranking functions for the Information Retrieval problem

(The translation is preparing for Elsevier)

This paper consider the Information Retrieval problem and associated objective to find qualitative ranking functions. These functions are supposed to be searched for as superpositions of the simple structured functions. Genetic algorithm is applied for this reason. Several metrics are proposed for detecting moments when algorithm has stagnated in a local minimum. Evolutions of functions are considered for different regularizators. For the best one the final version of genetic algorithm is launched on Trec7 and the best models are extracted. They are tested on Trec5,6,8. These models outperform the best ones extracted by exhausted algorithm from the space of very simple structured functions. Our final functions outperform the famous models $BM25, LGD, LM_{DIR}$ on the test samples as well.
Advisor: Prof. Vadim STRIJOV

2014-2015	**Detection of isomorphic structures in nonlinear regression models**
(The translation is preparing for Intelligent Data Analysis)	This paper develops an automatic procedure for forecasting model generation. A model is a superposition of primitive functions. It is represented by a directed labeled tree. During the generation procedure execution some models have excessive structure complexity. In this case they should be replaced with proper models of simplier structure. To provide this replacement we develop a simplification algorithm. It uses a procedure that finds isomorphic subgraphs in trees. To reduce the model structure complexity the algorithm replaces a subtree with a proper one of lesser complexity. Also the algorithm reduces the dimensionality of the parameter space of a model. It unifies parameter vectors for every pair of isomorphic subtrees in a tree. The proposed algorithm has significantly lesser computational complexity than the problem of exhausive search for graph isomorphism. To compare a model with the simplified one we use two datasets. The first one is a noisy synthetic dataset. The second is an European stock option dataset. Advisor: Prof. Vadim STRIJOV

COMPUTER SKILLS

Basic	RUBY, LATEX, Jabref
Intermediate	PYTHON, Qt, R, SQL, Linux, Matlab
Advanced	Java, C++

OTHER INFORMATION

Achievements and Awards	—— · 83th on long-contests on codechef.com among russian programmers
	2015 · Bachelor Diploma with distinction (average mark: 9.1/10)
	· Advanced Scholarship by WorldQuant for scietific work
	· Admitted to the School of Data Analysis of Yandex
	· Develop ranking functions outperforming the existing ones
	2014 · Admitted to the Department of Intelligent Systems
	2013 · Advanced Scholarship by Gazprombank for excellent academic achievements
	2011 · III diploma on discrete mathematics olympiad in MIPT
	· Score on United State Exam: 198/200 for Math and Physics
	· Maximum possible score on regional stage of IMO
	2010 · Governor's scholarship for excellent progress in school
	· Honorable diploma on All-Russian Mathematical Olympiad
Languages	RISSIAN · Mothertongue
	ENGLISH · Intermediate (conversationally fluent)
	FRENCH · Basic (simple words and phrases only)
Interests	Football · History and painting · Poetry · Programming contests ·

September 22, 2015