

Program of School-Seminar on
Operational Research and Applications
May 12 – May 16, 2015

Russian Science Foundation (RSF), Russia

National Research University Higher School of Economics,
136 Rodionova St., Nizhny Novgorod

Topic of school:
Clustering and Search Technique in Large Scale Networks

Tuesday, May 12

Room 209 HSE, 136 Rodionova St.

11:00-12:00 Registration of participants

12:00-13:00 Opening. Panos Pardalos

Lecture: Computational Models and Hard Optimization Problems

13:00-14:30 Lunch Break

14:30-15:10 Mario Guarracino

Lecture: Feature Selection for Supervised Classification

15:20-16:00 Leonidas Pitsoulis

Lecture: Decomposition of Signed Graphic Matroids

16:10-16:50 Valeriy Kalyagin

Seminar: Overlapping clustering

Wednesday, May 13

Room 209 HSE, 136 Rodionova St.

10:00-10:50 Oleg Prokopyev

Lecture: Integer Programming Approaches for Critical Elements Detection in Graphs

11:10-12:00 Oleg Prokopyev

Lecture: Integer Programming Approaches for Critical Elements Detection in Graphs

12:10-13:00 Theodore Trafalis

Lecture: Manifold Location Routing Problems and Applications to Customers Supply Chain Networks

13:00-14:30 Lunch Break

14:30-15:10 Oleg Prokopyev

Seminar: Exploiting Value Function-Based Reformulations for Solving Some Classes of Stochastic and Bilevel Integer Programs

15:20-16:00 Alexander Ponomarenko

Seminar: Exponential and Power Law Degree Distribution in Navigable Small World Graphs

16:10-16:50 Students presentations:

Alexander Kozitsin *Heuristic to Optimize Order Picking Routes in a Warehouse*

Oleg Kremnev *Uncertainty of Identification of Cliques and Independent Sets in Pearson and Sign Correlations Networks*

Thursday, May 14

Room 209 HSE, 136 Rodionova St.

10:00-10:50 Oleg Burdakov

Lecture: Label-correcting algorithms for solving large hop-constrained shortest path problems

11:10-12:00 Oleg Burdakov

Lecture: Label-correcting algorithms for solving large hop-constrained shortest path problems

12:10-13:00 Mikhail Batsyn

Seminar: Hard combinatorial optimization problems

13:00-14:30 Lunch Break

14:30-15:10 Oleg Burdakov

Seminar: A large-scale hop-constrained shortest path algorithms for optimal placement of unmanned aerial vehicles

15:20-16:00 Alexey Nikolaev

Seminar: Minimum sum-of-squares clustering on networks

16:10-16:50 Students presentations:

Anna Kharitonova *Development of System for Automatic Traffic Sign Recognition Using Deep Neural Networks*

Dmitry Semenov *Development of a Mobile Voice Control System Based on the CMU Sphinx Library*

Alexander Tolikin *Prediction of swimmer effectiveness based on his functional state*

Friday, May 15

Room 209 HSE, 136 Rodionova St.

10:00-10:50 Aristides Gionis

Lecture: Modeling and mining large graphs

11:10-12:00 Aristides Gionis

Lecture: Modeling and mining large graphs

12:10-13:00 Roman Belavkin

Lecture: Geometry and Combinatorics of a Hamming Space of Sequences in Problems of Parameter Control in Genetic Algorithms

13:00-14:30 Lunch Break

14:30-15:10 Roman Belavkin

Lecture: Optimal Control of Mutation Rate in Genetic Algorithms

15:20-16:00 Roman Belavkin

Seminar: Optimal Control of Mutation Rate in Genetic Algorithms

16:10-16:50 Andrey Savchenko

Seminar: Classification of composite objects based on sequential three-way decisions and granular computing

Saturday, May 16

Room 209 HSE, 136 Rodionova St.

10:00-10:50 Alexander Gasnikov

Lecture: Stochastic convex optimization

11:10-12:00 Alexander Gasnikov

Lecture: Huge-scale convex optimization. Randomization vs Sparsity

12:10-13:00 Alexander Gasnikov

Seminar: Stochastic convex optimization

13:00-14:00 Lunch

14:00-17:00 Computer Science Day

Lectures, discussions, snacks

What is a computer science?

Why is it important?

What are the real applications of Computer Science?

Participants:

Students of Nizhny Novgorod secondary schools

Participants of the School-Seminar