



**National Technical University
«Kharkov Polytechnic Institute»**

**Department of
Computer Mathematics
and Data Analysis**

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December 2011

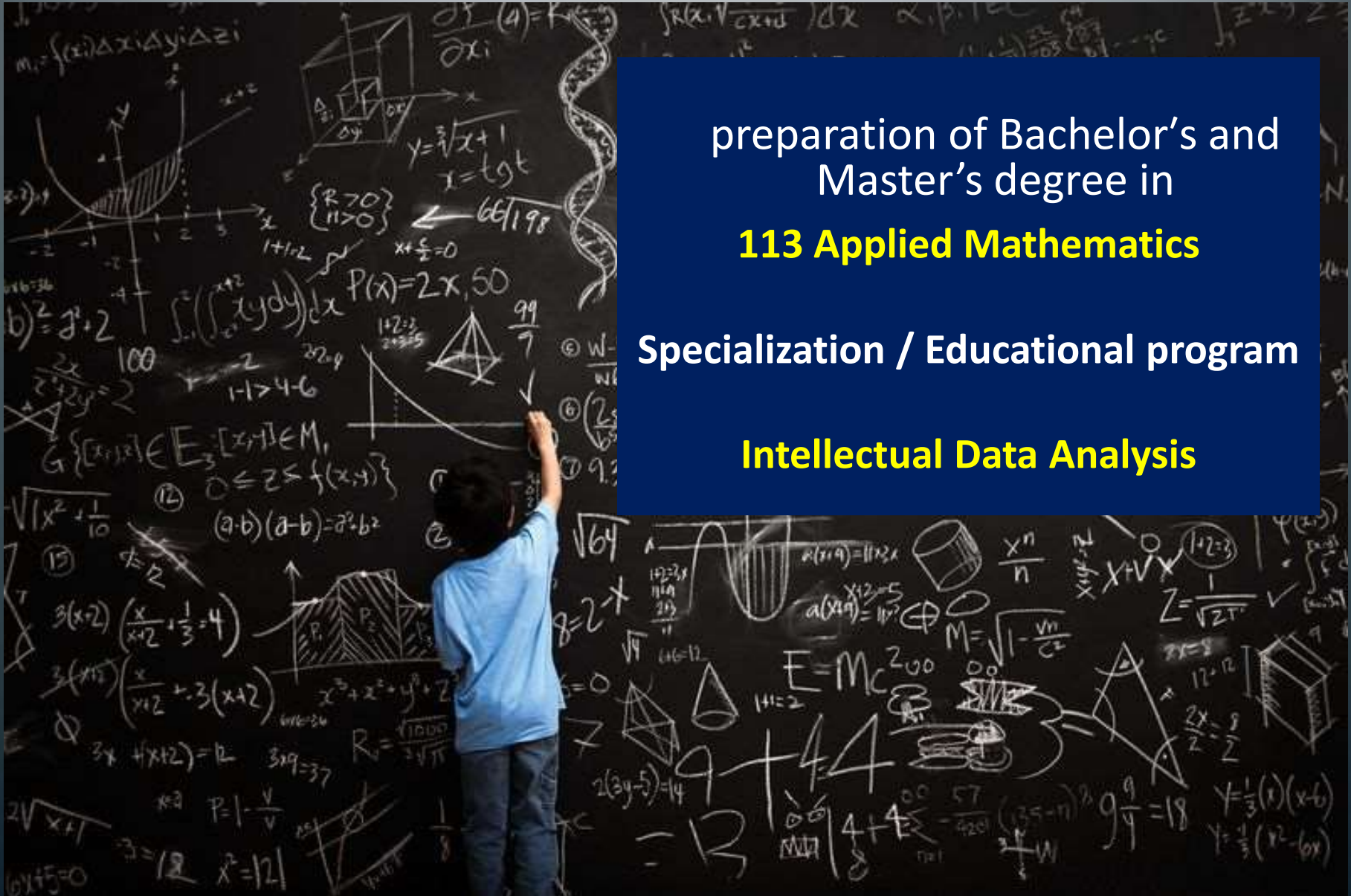
Department of NTU "KhPI"
«Computer Mathematics and Data Analysis»

preparation of Bachelor's and
Master's degree in

113 Applied Mathematics

Specialization / Educational program

Intellectual Data Analysis



Department of NTU « KhPI» «Computer Mathematics and Data Analysis»

The Department provides Bachelor's and Master's degree preparation in applied mathematics with specialization in mathematical methods of data analysis.

Graduates of the Department mastering modern methods of applied mathematics and computer science prepare for research and industrial activity in the area of developing and utilization of mathematical models, information technologies, software for data analysis, knowledge extraction, decision making.

Educational program (Specialization) «Intellectual Data Analysis» on the Department of Computer Mathematics and Data Analysis

- The educational program is aimed at preparation of specialists mastering modern mathematical methods and informational technologies of intellectual search, analysis, developing and visualization for the purpose of knowledge extraction and forecasting.
- The goal of training in the educational program is to develop proficiency in machine learning methods, soft calculations and computational intelligence; to acquire skills of development and exploitation processing software of ultralarge arrays based on the technology of distributed and cloud computing.

Educational program (Specialization) « Intellectual Data Analysis» on the Department of Computer Mathematics and Data Analysis

Professional activity of graduates is linked to

- the development of algorithms and programs of processing uncertain and unstructured data for the purpose of analyzing texts, signals and images; searching and retrieving knowledge;

- participation in the development of projects related to the classification and ranking Web objects (customers, users, and sites); modeling searching systems, traffic forecasting; analyzing and modeling interaction between clients and services; the detection and identification of anomalies and threats.

Speciality «Applied Mathematics» with the focus on the intellectual analysis of data

Fundamental mathematical education is a solid basis for future scientific and production career:

- mathematical analysis, algebra and geometry,
- mathematical logic,
- discrete mathematics,
- differential and difference equations,
- functional analysis,
- numerical methods,
- probability theory, mathematical statistics and random processes.

Speciality «Applied Mathematics» with the focus on the intellectual analysis of data

Professional computer training guarantees job placement in Ukraine and abroad:

- programming and algorithmic languages, software,
- computer architecture and computer networks,
- object-oriented programming,
- theory of algorithms and data structures,
- computer graphics,
- theory and technology of programming,
- databases and information systems.

Speciality «Applied Mathematics» with the focus on the intellectual analysis of data

Special applied mathematics and computer training in the field of methods and modeling technologies, decision-making and data analysis is the basis for the work in the field of research and development (R&D):

- optimization methods,
- data analysis,
- the theory of time series,
- mathematical and computer modeling,
- theory of control,
- the theory of decision-making.

Structure of preparation in the specialization «Intellectual analysis of Data» at qualifying level «Bachelor of Science»

- machine learning methods,
- methods of extraction and representation of knowledge,
- processing of signals and images,
- data visualization,
- methods of information security,
- mathematical linguistics,
- computer analysis and word processing,
- information retrieval, semantic WEB.

Structure of preparation in the specialization «Intellectual analysis of Data» at qualifying level «Master of Science»

- Distributed and corporate information system;
- parallel computing and cloud technologies;
- fuzzy models and methods, soft computing, neural network techniques; fundamentals of computational intelligence;
- expert system and knowledge base;
- intelligent search and analysis of data in the Internet.

Students of the Department twice reached the final of the world Cup on programming (International Programming Contest ACM-ICPC), Harbin, China



The Final of the world Cup on programming (International Programming Contest ACM-ICPC), Warsaw, Poland.



The Best Graduates of the Department

- Dzhulgakov Dmitry – Software Engineer in Facebook.
- Polosukhin Iliya – Software developer and Data Scientist in Salford Systems , 2008 – 2014, Software Engineer in Google.
- Bichurin Andrey - Software Engineer Intern in Google, 2013, Research Engineer in Samsung, 2013-2014, Software Engineer in Google.
- Lisichkin Vladislav – Software Engineer Intern in Google, 2015, Research Engineer in Samsung, 2013 – 2014, Software Engineer in Google.
- Bondarev Daniil - SDE2 (Software Developer Engineer) in Amazon Web Services
- Nikul'chenko Artem –Intern in IBM Zurich Research Lab, now deputy director in Cloud Works

Welcome to the Department of Computer Mathematics and Data Analysis of NTU «KhPI»!





The Head of the Department
Laureate of State bonus of Ukraine,
academician of Higher School of
Ukraine, Ph.D in engineering sciences ,
professor

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