Overview of MIDAS

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http://research.microsoft.com/∼goldberg/
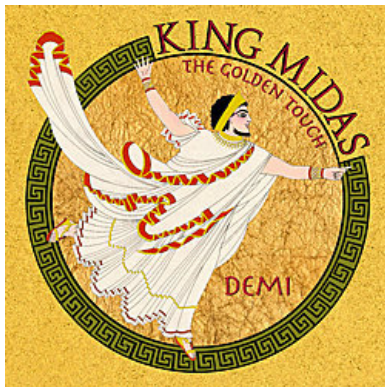
Welcome to MIDAS!

About MIDAS

- MIDAS stands for Microsoft Data Structures and Algorithms School.
- MIDAS is sponsored by Microsoft Research and organized in cooperation with SPbSPU and APTU.
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- Help to revive active algorithms research in Russia.

Outline

Organizational Issues

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- A limited number of additional students attending lectures.

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- Я очень прошу выдать мне удостоверение о том, где я провел предыдущую ночь... На предмет представления милиции и супруге.
- Сим удостоверяю, что предъявитель сего Николай Иванович провел упомянутую ночь на балу у сатаны, будучи привлечен туда в качестве перевозочного средства (боров).
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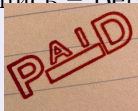
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Algorithms and Data Structures

- Fundamental field of Computer Science.
- Origins in Mathematics, Operations Research, Game Theory, and Electrical Engineering.
- Fundamental results with applications in many areas.
- Importance grows as technology advances and problems get bigger.
- Active area of research.
- Many variants: on-line, dynamic, parallel, distributed, ...
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Theory vs. Practice

- The final goal are practical and theoretically justified algorithms.
- Mathematics vs. engineering vs. science (scientific method).
- Interaction between theory and practice is important.

Lecturer Highlights

- Members of National Academy of Sciences, National Academy of Engineering, a Fellow of Royal Academy of Engineering, two ACM Fellows, SIAM Fellow, Turing Award and Nevanlinna award winner, Lanchester and Knuth prize winner.
- An industrial Lab Director and a Department Head, two University Department Chairs.
- Authors of eight books, many hundreds of papers, editors of tens of book volumes.
- Founders of major conferences (SODA, ALENEX, experimental track of ESA).
- Editors of major journals.
- Much, much more.

Important contributions to theory and to practice.
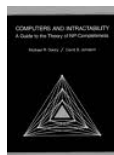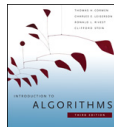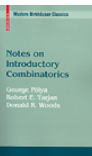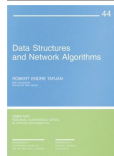
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- Renato F. Werneck, Microsoft Research.
  Shortest Paths and Experimental Evaluation of Algorithms

Academic Program

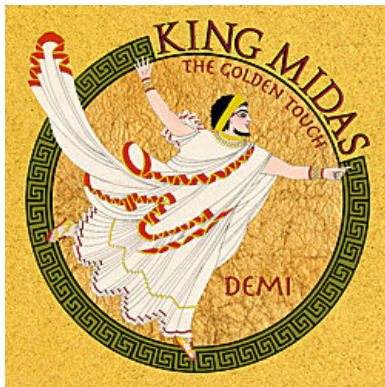- Lectures
- Q&A sessions
- Programming project
- Homework
- TA Team:
    - Ilya Mironov (head)
    - Ivan Kazmenko
    - Valery Lesin
    - Mikhail Levin
    - Alexander Smal
- Diplomas
- Programming project winner presentation

Social events and interaction time

School Rules

- Three types of students: Living in the dorm, local, and "volnoslushateli" (type 1, type 2, and type 3, respectively).
- Type 1, 2 students, Organizing Committee members and lecturers have access to all classes, social events, and lunches.
- Type 3 students have access to *lectures and coffee breaks only*.
- Breakfast is for type 1 students only.
- Wireless access is for Organizing Committee only.
- Internet available in the computer lab and dormitories.
- Please turn off your mobile phones, no texting in the classroom.

Enjoy the School!