Summer School on Algorithmic Data Analysis (SADA 07)

Final report

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Helsinki, 13 August 2007

Summary

Helsinki graduate school in Computer Science and Engineering (Hecse) organized an international summer school on algorithmic data analysis 28 May – 1 June 2007. This report summarizes the organization and budgetary issues of the school, as well as student feedback. More information about the summer school is available on its web page, www.cs.helsinki.fi/hecse/sada07/.

The focus of the summer school was on fundamental algorithmic principles and techniques to cope with feasibility issues in data analysis such as inefficiency of exact or online computation, and lack of main memory or even permanent storage space, when working on very large data sets. The School covered different algorithmic approaches motivated by these feasibility issues, including I/O-efficient algorithms and space-efficient index structures to deal with limited main memory, data stream algorithms to cope with time series data whose complete storage is not possible, and approximation algorithms for high-dimensional data. The aim of the school was to give the participants a good overview on the current topics in algorithmic data analysis research and an in-depth introduction to a few selected subareas.

The school was organised at Hotel Rantapuisto in Helsinki during 28 May to 1 June 2007. The school was targeted at graduate students as well as post-doc researchers. Students were selected during an application process that was open during 5 February 3 - March 2007. 112 students applied and 74 were accepted by the suitability of their research topics, poster, and background, and out of these 73 finally participated in the school. 15 different nationalities were represented, but most students came from Europe. Most of them were graduate students in computer science, but there were also a few students with background in mathematics, biology or bioinformatics. For a detailed list of the students, see Appendix C.

The school was organized by a Nordic and a Finnish network: it was the third in a series of Nordic algorithm spring/summer schools held in in Norway (2005) and in Denmark (2006), organized by the Nordic Network on Algorithms (NoNa), and the first in a series of summer schools by the Network of Finnish Graduate Schools in Information Technology (Figsit).

Programme

The summer school consisted of tutorials given by the invited lecturers. In addition, there were two poster sessions where the participants presented their own work. All participants were required to present their own poster. The summer school also made one excursion, boating in the archipelago of Helsinki and enjoying a reception by the University of Helsinki.

In addition the local PhD school Hecse (Helsinki Graduate School in Computer Science and Engineering) held its annual poster session at the same location.

The speakers of the summer school were all internationally highly recognized people in the fields related to algorithmics

- Lars Arge, University of Aarhus, Denmark

I/O-efficient algorithms and data structures (2 lectures)

- S. Muthu Muthukrishnan, Google Inc.
  Data stream algorithms (3 lectures)
- Piotr Indyk, MIT, MA, USA
  Efficient nearest neighbor search algorithms (2 lectures)
- Nir Ailon, Institute for Advanced Study, Princeton, NJ, USA
  New algorithms for high dimensional data (2 lectures)
- Paolo Ferragina, University of Pisa, Italy
  Compressed data structures for strings (3 lectures)
- Aristides Gionis, Yahoo! Research Barcelona, Spain and University of Helsinki, Finland
  Mining the graph structures of the web (2 lectures)
- Juha Kärkkäinen, University of Helsinki, Finland
  Suffix Sorting by Difference Cover Sampling (1 lecture)

Each lecture was 90 minutes long.

Lecture and poster abstracts were published in a proceedings,

> Veli Mäkinen, Greger Lindén, Hannu Toivonen (eds.), Abstract Proceedings of the Summer School on Algorithmic Data Analysis (SADA 2007) and the Annual Hecse Poster Session. Report B-2007-4, Department of Computer Science, University of Helsinki, May 2007. 108 + viii pp.

which is available on the web site of the summer school, http://www.cs.helsinki.fi/hecse/sada07/. The proceedings can also be ordered in paper format from the organisers.

Lecture slides are also available on the school web page and after the school a wiki page was set up for students where they could add links to photos taken during the school.

For the detailed programme see Appendix B.

Budget

The total expenses were 51 699 EUR and spent on the following main items

- Free registration for all participants accepted to the summer school (the direct cost implied by each participant was about 300 EUR, which included lunches, coffee break, excursion, dinner, handouts of lecture material).
- Travel, accommodation and a small fee for all speakers of the summer school.
- Free accommodation for all participants from sites participating in the NoNA NordForsk project (13 participants), the Figsit network (5) and 1 student from Russia.

The budget of the summer school was financially supported by NoNA by 24 706 EUR and 26 993 EUR by the Academy of Finland (Figsit).

For a more detailed report, see Appendix A.

Feedback from the students

We gathered feedback about the school both in written form and during the last session on Friday. The main points in the feedback were

- the **lectures and lecturers were of high quality**
- the topics were interesting (but a little bit narrow) and gave a good overview of the field
- it would have been useful to have **lecture handouts** (beforehand)

- perhaps some more interactivity instead of only lectures would have been useful
- the title of the school was a bit misleading and a better description of what the school teaches was required
- the **poster session should have been earlier**, and the posters should have been up for several days in the vicinity of the lectures
- the audience was very international
- the days were very long
- the organization was good
- the location was excellent, but a little bit far from the centre of Helsinki
- unfortunately, there was no air conditioning, and the air was rather thick in the small lecture room
- there was no free wireless access in hotel rooms (only in lecture rooms/halls)
- the food was (mostly) nice, but some would have preferred more variation
- Finnish coffee and beer were not to everybody's liking

For a detailed report, see Appendix D.

Experiences of the organisers

Overall the organisation of the summer school went really well. Here is a short list of our experiences and perhaps a few things that could have gone better.

- **Lecturers** The planning of the school started a little bit too late, in the late Autumn of 2006. Once the general theme was fixed to "algorithmic data analysis", we started the search for lecturers with two lists of names. One under the sub-topic (i) algorithmic tools for data analysis; and one under the sub-topic (ii) emerging new topics in data analysis. After several months of the invitation process, almost all lecturers who accepted the invitation came from list (i). At this point it was already too late to change the title of the school more towards (i), as the first CFPs were already out. Some students complained about the misleading title. The objective of the school was edited several times during the spring of 2007 once the final combination of lecturers and their topics were being completed. Lesson to be learned: start the invitation process 10-12 months before the school instead of 7.
- **Students.** We did not expect to receive more good applications than what we had space for; the selection criteria were not well-defined, as we just announced in the web page that the selection will be based on the student's background in algorithms. The organizing committee ranked the candidates based on this rule, but the final list of accepted participants was also affected by the affiliations to NoNA, Hecse, Figsit, by the desire to obtain smooth distribution over different institutions/countries, and by the favoring of PhD students over postdocs. Lesson to be learned: do not state any criteria beforehand, just say that the organizing committee will choose the participants as it sees best for the success of the school.
- **Lectures.** The lectures were not very interactive. The students were not supposed to solve problems or turn in solutions or present anything to the lecturers or the other students (except during the poster sessions). This suited some students, while others would have liked the lectures to be more interactive. If the lectures had been more interactive, there would have been less time for the lecturers to present their courses or less lecturers, or then we would have had to extend the duration of the school, e.g., to two weeks.
- **Poster sessions.** The poster sessions were very successful. Especially during the Hecse poster session, there were a lot of participants, including Hecse students and supervisor as well as summer school students and lectures, perhaps over a hundred persons. This created a certain liveliness and intenseness. The SADA poster session was held on Thursday, one day

before the school ended. It should have been earlier and should have been up for several days. Then the students would have had better time to get to know each other and each others' work. The poster session could have been combined with very short presentations in the lecture hall and with some dedicated time slots for presenting the posters. We asked our local university book shop to join one of the poster sessions and sell a selected set of relevant books. Some students complained that it is inconvenient to bring a poster on a flight. A solution might be to have the poster printed on a foldable cloth (nylon etc.).

- **Venue and premises**. We booked the venue in good time and reserved a lecture hall for a maximum of 80 people, but perhaps we did not quite believe that so many would attend the school. However, the school turned out to be far more attractive with 112 applications. Only then did we realise that our lecture room would not be optimal for the 80 accepted students (and lecturers) but rather small. At that point we were not able anymore to secure a bigger lecture hall for the whole week (we did have the auditorium for two days). On the other hand, the ambiance in the smaller lecture room was quite intense and people did not come and leave as they did in the auditorium. In the smaller lecture hall, people came in time to secure a seat and stayed during the lectures.
- **Location**. The venue was about 15 km from the centre of Helsinki and this turned out to be mostly good. It was possible but perhaps a little bit inconvenient to leave the premises (walk one kilometre, take the metro), so the students stayed both during the lectures and the dinners. The hotel is quite isolated so there are really no restaurants or other "entertainment services" around. On the other hand, the students could take an evening off and go out on town if they wanted. Most students from Helsinki did not stay over night (due to expenses and there would also not have been enough rooms) and this was not so good for networking.
- **Accommodation and reservations**. We asked students to reserve their rooms at the hotel themselves and thereby avoided all administration concerning when they would come or leave. We also gave a list to the hotel of all the students and lecturers whose accommodation we would pay.
- **Social programme**. Most of the practical tasks were planned and performed by us with some help from colleagues and students. Perhaps the social programme could have benefited from some more planning, e.g. arranging more and different things in the evenings, etc.

And finally a **checklist** of things to remember

Planning
General

- Theme
- Location (e.g. town)
- Date (e.g., no overlaps)
- Timetable for organisation
- Organising committee and volunteers
- Budget
- Sponsors and support from funding organisations
- Book keeping, accounts

Web page

- Objective of the school
- Status (level, credit units)
- Programme and timetable
- Lecture material
- Venue
- Accommodation
- Applications
- Registrations and fees
- Stipends
- Organising committee

- Background and sponsors
- Contact information, mailing list and email address
- Post-school information, e.g., feedback, photos, lecture notes, etc.

Applications and registrations

- "Marketing", email, web, poster, etc.
- Forms
- Instructions
- Evaluation of applications

Venue

- Location and suitability
- Reservation
- Price
- Enough accommodation

Execution

General

- Name tags and holders
- List of participants
- Information desk and stand, organisers' office
- Instructions for reaching venue
- Floor plan of venue
- Information about local universities, town, maps
- Paper and pens, other stuff
- Bag and/or folder
- Signage
- Room for leaving things at night (including bags and computers of students not staying at the venue)
- Feedback questionnaire
- **Certificates of participation**
- Web page for photos

Lecturers

- Accommodation
- Travel expenses (forms and receipts)
- Fees (and applications for tax at source cards)
- Reception and transportation

Lectures

- Sessions chairs
- Proceedings and lecture notes
- Presence list

Posters

- Poster stands (or walls)
- Pins, tape, strings, ...

Accommodation reservations

- Lecturers
- Organisers
- Students

Food

- Dietary needs
- Coffee-all-day (if provided at venue)
- Estimation of number of participants (very hard)

IT

- WLAN
- Laptop for lecturers
- Projectors
- Wireless mouse

Excursions

- Map
- Receptions, drink and food (tickets)
- Instructions

experiences)

Postprocessing

- **Final report** (Description, programme, expenses, participants, feedback,
- "Closing accounts"
- **Registration of results** (students, credit units, grades)

Appendices

A Budget

B Detailed programme

C List of participants

D Feedback form and returned feedback

Appendix A: Budget

Revenue

Nordic Network of Algorithms (NoNa)	24 706 EUR
Academy of Finland (Figsit)	26 993 EUR
Total budget	51 699 EUR

Expenses

Accommodation, food, lecture rooms at Hotel Rantapuisto	39 534 EUR
Lecturers travel expenses	3 530 EUR
Lecturers' fees	4 249 EUR
Proceedings	1 840 EUR
Excursion on boat	1 869 EUR
Supplies such as name tags, pins and tape for posters, transportation of poster stands	676 EUR
Total expenses	51 699 EUR

Appendix B: Detailed programme

Sunday 27 May, 2007

18:00 Reception and registration, Cellar Restaurant

Monday 28 May, 2007

Morning session, Chair: Professor Jorma Tarhio

09:00 Lars Arge: I/O-efficient algorithms and data structures, Auditorium

10:30 Coffee break

11:00 S. Muthukrishnan: Data stream algorithms, Auditorium

12:30 Lunch, Restaurant

Afternoon session, Chair: Professor Hannu Toivonen

14:00 Piotr Indyk: Efficient nearest neighbor search algorithms, Auditorium

15:30 Coffee break, Auditorium

16:00 Nir Ailon: The Fast Johnson Lindenstrauss Transform and Applications, Auditorium

18:00 Dinner, Restaurant

20:00 Beach sauna

Tuesday 29 May, 2007

8:00 Breakfast, Restaurant

Morning session, Chair: Professor Jyrki Kivinen

09:00 S. Muthukrishnan: Data stream algorithms, Rooms 1-2

10:30 Coffee break

11:00 Lars Arge: I/O-efficient algorithms and data structures, Rooms 1-2

12:30 Lunch, Restaurant Afternoon session, Chair: Professor Pekka Orponen

14:00 Piotr Indyk: Efficient nearest neighbor search algorithms, Rooms 1-2

15:30 Coffee break, Exhibition Hall

16:00 Annual Hecse poster session, Exhibition Hall

18:00 Dinner, Exhibition Hall or Restaurant

19:30 Big sauna at Exhibition Hall

Wednesday 30 May, 2007

8:00 Breakfast, Restaurant

Morning session, Chair: Professor Tapio Elomaa

09:00 Paolo Ferragina: Compressed data structures for strings, Rooms 1-2

10:30 Coffee break
11:00 S. Muthukrishnan: Data stream algorithms, Rooms 1-2
12:30 Lunch, Restaurant Afternoon session, Chair: Professor Esko Ukkonen
14:00 Nir Ailon: Aggregating Discrete Information from Inconsistent Sources, Rooms 1-2
15:30 Coffee break
16:00 Excursion with boat from Rantapuisto, arrival at Market Square
18:30 Reception at the University of Helsinki, Unioninkatu 33
20:30 A night on town on your own. Return by yourself to the hotel, e.g., by metro.

Thursday 30 May, 2007
8:00 Breakfast, Restaurant
Morning session, Chair: Professor Pekka Orponen
09:00 Aristides Gionis: Mining the graph structures of the web, Rooms 1-2
10:30 Coffee break
11:00 Paolo Ferragina: Compressed data structures for strings, Rooms 1-2
12:30 Lunch, Restaurant Afternoon session, Chair: Professor Jyrki Kivinen
14:00 SADA 07 poster session, Exhibition Hall
15:30 Coffee break, Exhibition Hall
16:00 SADA 07 poster session continues, Exhibition Hall
18:00 Workshop dinner at hotel, Restaurant
19:30 Big sauna at Exhibition Hall

Friday 1 June, 2007
8:00 Breakfast, Restaurant
Morning session, Chair: Professor Tapio Elomaa
09:00 Paolo Ferragina: Compressed data structures for strings, Auditorium
10:30 Coffee break
11:00 Aristides Gionis: Mining the graph structures of the web, Auditorium
12:30 Lunch, Restaurant Afternoon session, Chair: Professor Hannu Toivonen
14:00 Juha Kärkkäinen: Suffix Sorting by Difference Cover Sampling, Auditorium
15:30 Coffee break
16:00 Feedback, Certificates, Closing, Auditorium
18:00 Dinner, Restaurant

Saturday 2 June, 2007
8:00 Breakfast for participants staying at the hotel, Restaurant

Appendix C: List of Participants

Last name	First name	Institute	City	Country
Lecturers				
Ailon	Nir	Institute for Advanced Study	Princeton	USA
Arge	Lars	University of Aarhus	Aarhus	Denmark
Ferragina	Paolo	University of Pisa	Pisa	Italy
Gionis	Aristides	Yahoo! Research	Barcelona	Spain
Indyk	Piotr	MIT	Massachusetts	USA
Kärkkäinen	Juha	University of Helsinki	Helsinki	Finland
Muthukrishnan	S.	Google inc.	New York	USA
Students				
Aho	Timo	Tampere University of Technology	Tampere	Finland
Bille	Philip	IT University of Copenhagen	Copenhagen	Denmark
Gaspers	Serge	University of Bergen	Bergen	Norway
Jensen	Anders Hessellund	Aarhus University	Aarhus	Denmark
Järvelin	Antti	University of Tampere	Tampere	Finland
Jørgensen	Allan Grønlund	University of Aarhus	Aarhus	Denmark
Koivistoinen	Heidi	Tampere University of Technology	Tampere	Finland
Kujala	Jussi	Tampere University of Technology	Tampere	Finland
Lokshtanov	Daniel	University of Bergen	Bergen	Norway
Losievskaja	Elena	University of Iceland	Reykjavik	Iceland
Mancini	Federico	University of Bergen	Bergen	Norway
Meister	Daniel	University of Bergen	Bergen	Norway
Mihai	Rodica	University of Bergen	Bergen	Norway
Nordström	Jakob	Royal Institute of Technology	Stockholm	Sweden
Ruzic	Milan	IT University of Copenhagen	Copenhagen	Denmark
Stepanov	Alexey	University of Bergen	Bergen	Norway
Tansini	Libertad	Chalmers University of Technology	Gothenburg	Sweden
Tsivtsivadze	Evgeni	Turku University and TUCS	Turku	Finland
Ajwani	Deepak	Max Planck Institute for CS	Saarbrücken	Germany

Berberich	Klaus	Max Planck Institute for CS	Saarbrücken	Germany
Berlingerio	Michele	ISTI-CNR Pisa, IMT Lucca	Pisa	Italy
Bondarenko	Vladimir	University of Constance	Konstanz	Germany
Bordino	Ilaria	La Sapienza University	Rome	Italy
Bringmann	Björn	Katholieke Universiteit Leuven	Leuven	Belgium
Cleju	Ioan	University of Konstanz	Konstanz	Germany
D'Angelo	Gianlorenzo	University of L'Aquila	L'Aquila	Italy
Dillabaugh	Craig	Carleton University	Ottawa	Canada
Dries	Anton	Katholieke Universiteit Leuven	Leuven	Belgium
Fischer	Johannes	University of Munich	Munich	Germany
Fitoussi	Hen	Ben-Gurion University	Israel	Israel
Freivalds	Karlis	University of Latvia	Riga	Latvia
Gerlach	Wolfgang	Universität Bielefeld	Bielefeld	Germany
Gieseke	Fabian	University of Dortmund	Dortmund	Germany
Grimsmo	Nils	NTNU	Trondheim	Norway
Hollanders	Goele	Hasselt University	Diepenbeek	Belgium
Kaligosi	Kanela	Max Planck Institute for CS	Saarbrücken	Germany
Krushevskaja	Darja	Tartu University	Tartu	Estonia
Kull	Meelis	University of Tartu	Tartu	Estonia
Mampaey	Michael	University of Antwerp	Antwerpen	Belgium
Mansmann	Florian	University of Konstanz	Konstanz	Germany
Moelans	Bart	Hasselt University	Diepenbeek	Belgium
Nitto	Igor	University of Pisa	Pisa	Italy
Pich	Christian	University of Konstanz	Konstanz	Germany
Pinelli	Fabio	IET-Univ Pisa ISTI CNR PISA	Pisa	Italia
Poernomo	Ardian Kristanto	NTU Singapore	Singapore	Singapore
Prado	Adriana Bechara	University of Antwerp	Antwerp	Belgium
Silvestri	Francesco	University of Padova	Padova	Italy
Tsirakis	Nikos	University of Patras	Patras	Greece
Vanschoren	Joaquin	Katholieke Universiteit Leuven	Leuven	Belgium
Venturini	Rossano	University of Pisa	Pisa	Italy
Vyahhi	Nikolay	St.Petersburg State University	St.Petersburg	Russia
Wittler	Roland	Universität Bielefeld	Bielefeld	Germany
Ziegler	Hartmut	University of Konstanz	Konstanz	Germany
Haiminen	Niina	University of Helsinki	Helsinki	Finland

Järvisalo	Matti	Helsinki University of Technology	Espoo	Finland
Kollin	Jussi	University of Helsinki	Helsinki	Finland
Korpela	Mikko	Helsinki University of Technology	Espoo	Finland
Laasonen	Kari	University of Helsinki	Helsinki	Finland
Miettinen	Pauli	University of Helsinki	Helsinki	Finland
Narayanan	Krishnan	University of Helsinki	Helsinki	Finland
Nikander	Jussi	Helsinki University of Technology	Espoo	Finland
Oikarinen	Emilia	Helsinki University of Technology	Espoo	Finland
Reyhani	Nima	Helsinki University of Technology	Espoo	Finland
Saikkonen	Riku	Helsinki University of Technology	Espoo	Finland
Salmela	Leena	Helsinki University of Technol	Espoo	Finland
Schumacher	Andre	Helsinki University of Technology	Espoo	Finland
Silvasti	Panu	Helsinki University of Technology	Espoo	Finland
Suomela	Jukka	HIIT / University of Helsinki	Helsinki	Finland
Toivonen	Jarkko	University of Helsinki	Helsinki	Finland
Ukkonen	Antti	Helsinki University of Technology	Espoo	Finland
Wessman	Jaana	University of Helsinki	Helsinki	Finland
Virpioja	Sami	Helsinki University of Technology	Espoo	Finland
Välimäki	Niko	University of Helsinki	Helsinki	Finland
Yang	Zhirong	Helsinki University of Technology	Espoo	Finland
Organizing committee				
Toivonen	Hannu	University of Helsinki	Helsinki	Finland
Ukkonen	Esko	University of Helsinki	Helsinki	Finland
Elomaa	Tapio	Tampere University of Technology	Tampere	Finland
Kivinen	Jyrki	University of Helsinki	Helsinki	Finland
Mannila	Heikki	Helsinki University of Technology	Espoo	Finland
Orponen	Pekka	Helsinki University of Technology	Espoo	Finland
Tarhio	Jorma	Helsinki University of Technology	Espoo	Finland
Mäkinen	Veli	University of Helsinki	Helsinki	Finland
Linden	Greger	University of Helsinki	Helsinki	Finland

Appendix D: Feedback

Summer School on Algorithmic Data Analysis

Helsinki, May 28 - June 1, 2007

--- Questionnaire --- 57/73 returned questionnaire

Personal Information

[5] Master student	[50] PhD student	[2] Post doc	[0] Tenure/Senior	[0] Industry
Background in	[53] Computer Science	[6] Mathematics	[3] Other: Bioinformatics (1), Biology (1), Signal processing (1)	

Summer School Program

Quality of lectures	[49] high	[9] satisfactory	[-] disappointing	
Level of lectures	[5] too high	[52] about right	[-] too low	
Selected topics	[2] too diverse	[48] about right	[6] too narrow	
Quality of lecture notes	[12] high	[32] satisfactory	[9] disappointing	
disappointing	"We didn't get any, right?"			
disappointing	"It would have been nice to have handouts beforehand (to be able to do remarks)"			
disappointing	"slides in the web before lectures"			
disappointing	"there weren't too many of them"			
Length of lectures	[4] too long	[53] about right	[-] too short	
too long	"2*40 +break in between would have been better"			
about right	"sometimes need break inside 1.5 hour lecture (sometimes it is, but sometimes not :()"			
Poster sessions	[28] very useful	[28] somewhat useful	[1] waste of time	
very useful	"but it was hard + I haven't had an opportunity to ask about posters from my group"			
Daily program	[10] too long	[45] about right	[1] too short	
Length of summer school	[1] too long	[53] about right	[3] too short	
Number of lecturers	[3] too high	[51] about right	[4] too low	
Number of participants	[5] too high	[51] about right	[1] too low	

Summer School Organization

Correspondence between announcement and the actual school		[53] good	[4] acceptable	[ ] bad
acceptable	"Actually the school was much more relevant to me than what I thought based on the announcement"			
Pre-school information sent out to participant		[43] sufficiently informative	[10] acceptable	[3] disappointing
Services during school		[54] good	[3] acceptable	[ ] disappointing
Facilities at the conference site		[45] good	[9] acceptable	[3] disappointing
disappointing	"No internet in rooms"			
acceptable	"Air conditioning!!"			
disappointing	"Heat"			
Social program		[36] good	[18] acceptable	[1]

disappointing

Overall

Please rank the following aspects according to what meant most to you.
Use 1, 2, and 3 (1 = most important, 3 = least important).

1: 9	2: 19	3: 29	Average: 2.25	specific knowledge you obtained
1: 30.5	2: 14.5	3: 10	Average: 1.63	helping you to mature scientifically/ improving your overview of the field
1: 18.5	2: 25.5	3: 13	Average: 1.90	interacting with other participants and establishing scientific contacts

If you had been asked to pay parts of the local expenses in form of a registration fee of say EUR 300, would you still have participated?

[15] very likely so [49] maybe [4] definitely not

very likely so	"assuming the university would have paid it, and in the end, the money might come from the same pocket..."
maybe	"if university paid the fee"
very likely so	"if covered by grad school"

Name the three most positive things you can think of saying about the summer school:

- excellent lecturers
- excellent location & food
- very good organization
- quality of speakers, topics and facilities
- good lecturers, topics
- good people & atmosphere
- convenient accommodation & good food (but too much of food)
- very nice lectures and interesting topics
- sauna and other social activities
- interesting people – good mixture
- good possibilities to get contact to other (PhD) students
- organization was very good
- nice location
- interesting lectures, good quality
- good location, both the hotel and Helsinki
- some very good lecturers
- nice location
- good organization
- good place and nice hotel, sea and forest
- interesting topics, right what I want :)
- good information before and inside school, friendly organizers
- nice food, btw.
- nice sauna
- high quality of lectures
- poster session, I have now a lot good new ideas
- good location
- interesting topic
- good lecturers

- appropriate location
- the lectures were very interesting. The speakers are great
- The people were very friendly, and it was nice to meet new people from this research field
- the organization was good
- poster session
- written proceedings of posters
- quality of lecturers
- good atmosphere
- sauna ;-)
- nice people
- good lectures
- nice venue
- very nice place
- good social program
- high quality talks
- most presentations were excellent. Also “reusing” the lecturers, i.e., having them present lectures that covered topics in greater detail than would have been possible in only one lecture. In particular I'd raise Ferragina in this respect as a great example (and his lectures were just excellent). Also the organization at the venue was good.
- excellent lecturers
- all arrangements worked well
- the venue was nice
- excellent lecturers
- good food
- nice venue
- food
- environment
- Ferragina
- quality of lecture(r)s
- nice people, both students and lecturers (Muthu!)
- night out in the town
- high average quality of lectures
- venue
- free food, good spirit among the students and lecturers, interesting lecturers
- interesting and skilled speakers
- very diverse audience from around the world
- in the program there were enough breaks and generally well planned
- nice location & good food
- interesting lectures
- meeting people
- poster session (excellent idea for sharing the ideas among us)
- interesting topics
- very high level of the speakers
- poster session is a perfect idea. Interaction with other PhD is really important
- nice place, no waste of time for moving
- nice topics
- meeting new people

- Muthu's lectures were outstanding
- I like that almost everything/everybody was in the hotel
- the pace was really well chosen (on macroscopic & microscopic level) as were the lecturers
- good speakers, from both academia & companies, broad but relevant topics
- rich social program, sauna in the evening
- nice location & venue
- the organization was very good
- very good speakers and interrelated topics
- many students
- location
- interaction with participants
- speakers (most of)
- very good organization of this school
- participants coming from different fields and different countries
- some lectures and topics were of great interest
- interesting topics
- nice people
- smooth organization
- interesting
- quality of lectures
- good global overview of the field
- interaction with scientific community
- interesting basic knowledge of what is going on in the different areas of science
- useful hints of what to do. Given by experienced lecturers.
- The social environment (sauna etc.) was perfect!
- Number of new ideas that came up with the lectures
- networking with other people
- food
- interesting lectures
- getting to know people
- very good organised
- very good lecturers
- good overview of the field of algorithmic analysis
- lecturers
- establishing scientific contacts
- nice place for the school
- good organization of the school
- lectures were informative
- good pace (i.e., sufficient breaks and time for socialising)
- seemed very well organized
- good quality of lectures
- good overview of topics
- recent results
- interaction
- good organization!
- Good not to have exercise sessions!
- High level lectures, speakers and participants

- topics for lectures were chosen carefully. Lectures tended to give an overview of things and not specific algorithms
- nice people
- seaside lectures
- good speakers
- international participation
- nice location
- interesting lecture topics (though not exactly my main subjects)
- maybe exercise sessions
- the lectures
- the hotel and its location
- the organization
- great lectures/lecturers
- good place
- high quality lectures (esp. Mutu & Paolo)
- good location
- international audience
- good organization
- informatively
- good topics
- poster session
- entertaining lecturers
- sauna
- both theoretical and applied examples
- organization
- quality of lectures
- location

Name the three most negative things you can think of saying about the summer school:

- too narrow topic (more machine learning !!! please)
- Finnish beer is not the best :)
- poster session should be earlier (to establish contacts)
- koffie
- a get-to-know session at the beginning was missing
- 4 lectures a day are a bit hard to digest
- the air in the small conference room was a bit sticky
- food
- social program
- no clue of what to do in Finland. The information about how to go to the hotel from airport is also misleading
- the food
- the food
- the food

- heat in the lecture halls, bad air in the presentation hall
- I cannot point to one (too) negative point, perhaps more machines with internet access (for those without notebooks)
- less interaction with Finnish students
- no free internet in hotel rooms
- a little too costly hotel
- internet access in rooms (for free)
- too much security at reception
- access to internet
- a bit more variety in meals (but I was generally happy with it)
- [Note: I do not have any major issues and was very happy with the summer school]
- program too long
- we were far from the center of Helsinki
- we could have more lecture notes
- days were long especially wen you add >1 hour of travel both on mornings and evenings
- passive and lecture based I had expected something more interactive)
- announcement of final program was late
- no preparator's material before school and no time to read the given material during the school
- bad facilities between Tuesday and Thursday
- I hope all the lecture notes can be found on the web site some day
- the place was quite far away from railway stations and airport
- our poster session could have been earlier. In Tuesday, for example.
- No free internet connection in the rooms
- air conditioning
- too much information over little time
- too long programs (esp. Monday)
- too weak coffee
- too short poster sessions; its better to have posters hanging during the whole school
- too narrow topics; it's better to have one “very broad” lecture (as an introduction lecture) and one “narrow” lecture so that anyone can follow an introduction lecture and interested people can follow “narrow” topics
- no seminar sessions; it's better to have some time to discuss, work in groups, solve some problems
- speakers (a few)
- Monday was exhausting
- too much diversity in topics
- there were no exercise sessions or work in groups to get to know better topics and people
- little narrow topics
- interesting but too different from my background to be really useful
- sun goes up too early, organize in spring/fall
- somewhat isolated location
- coffee was sometimes hard to drink
- coffee wasn't that good
- there is not much negative to say. However, the breaks could have been a little bit longer to give the people some minutes to relax (and to talk to each other).
- beer could have been less expensive – but I guess that I cannot really be influenced by you :)
- more time to work on exercises or group work as exercises may have been nice
- I did not know about the reception on Sunday before booking my light -> I could not attend it

- too short
- sometimes lecturers were difficult to understand
- felt in a nuclear testing zone! :-)
- maybe the place is far from the city centre
- coffee tastes like water
- title a bit misleading (SADA)
- many lectures on similar, mostly string processing topics
- the lecture rooms 1-2 were too hot and large auditorium not that nice for a classroom feeling
- Vuosaari is far away from Helsinki center
- recycling of the food (I got bored), the diverse background of participants that made it hard to form good connections, the lack of some social program
- distance room city centre to hotel
- most topics not very relevant for me
- too long poster sessions
- air quality in the small lecture room
- getting to know the city wasn't encouraged enough
- hang-over in Thursday morning
- took all the time for one week
- took 2 h to travel per day
- didn't find the nature path
- far from Helsinki downtown
- can't think of another
- the days were too long, esp. Monday
- the 4-hour poster session was too long, 2-3 hours would be ok
- the marathon poster session was too long. The IO issues were in my opinion overrepresented
- N/A
- located far away from the city centre
- the accommodation expense is a bit high
- expensive hotel
- could be more and better social events (more to see on excursion, some games or so in the evening)
- some proofs of some theorems could have been skipped
- the food was too good, have to eat too much
- no internet in rooms was a surprise
- no time to review the notes
- no slide printouts
- no time to sleep <= too interesting
- no sightseeing, except of boat trip, of Helsinki
- coffee was not always of some quality
- some fruit during the breaks would be nice
- lecturers sometimes went rather fast
- lecture slides (most) were not available before/during/shortly after the lectures themselves
- some lecturers were too difficult to follow or understand
- perfect break within a lecture is about in the middle of a lecture
- no handouts beforehand
- 4 hour of poster session – hard. It would be easy if the posters would be available for a longer time & people would be able to see them for a longer period

- getting lecture notes/hand-outs would have been very useful
- the poster session was somewhat long

Comments and suggestions for improvements of the summer school:

- give lecture notes or hand-outs on paper immediately (or even beforehand) so that is possible to go over the material again
- 2 * ca 40 min + break in the middle would have been better. Now it turned out as something like 70 + 5 min break + 20 min, which was too long
- I think it was a really good school
- poster session at the beginning of the summer school => more scientific contact with other students at the beginning of the school
- lectures at the morning, “work groups” in the afternoon (small groups, “talking” about open problems)
- - all in all: many thanks for this nice summer school
- see points above
- slide printouts (before school) (or even slides in the web)
- maybe some instruction how to survive in Helsinki (metro/bus tickets, some maps on SADA web page)
- evening not-CS lectures (like how to write a paper, etc. more complicated maybe)
- emails in the list of participants
- video/audio lectures on the web-page SADA
- list of participants with poster-subjects on the web before school
- poster session at the end of the week is not a good idea: there is no time to discuss with other participants on their posters in the following days, and many lecturers have left the school before the poster session
- internet :), WLAN is bad, slow, etc.
- poster session should be on one of the first days
- it could be a good idea to have the poster session at the first day
- the poster session should have been earlier
- videos of the lectures on the homepage
- poster session at the very beginning to get to know each other('s research)
- recordings would be nice
- posters on display through the entire summer school? This way there would also be more to discuss during the breaks
- I found 1.5h/2h of lectures in one go a bit too long, especially when the break of 5 min was usually only 30 min before the end
- I liked the lecture-only style, I think I wouldn't have learned as much from a more interactive system
- another shorter day with more social activities in the evening; maybe easier ways of recognizing people with similar background or research interests. However, I do think that diversion is good.
- More information about lectures in advance would be useful
- topics should be more diverse
- Hecse poster session was nicer due to seniors present, would be nice to have local seniors in other session for more interaction
- rantasauna was very nice
- poster session earlier
- some more interacting, not an examen but some tutorials (maybe)
- please ask lecturers to prepare and check presentations in advance
- poster session could have been earlier (say on Tuesday) -> through their work you get a better feeling for the other participants

- given that most of the people get less sleep than usually and the lectures are quite high level it would be nice to have more “active” parts interleaved with the lectures (instead of “only” caffeine”. Thanks.
- Not more than 3 times 1.5 hours of lectures per day
- comments are in the previous section
- poster session at the beginning of the school would have been useful for a more active interaction among participants
- more interaction
- time for reflection during the school
- more time from lectures about poster session in order to give some feedback to participants
- if you could somehow arrange more interaction with the lecturers, and perhaps try to have more of the lecturers at the poster sessions
- posters hanged up earlier, during several days (1 or 2 before poster session)
- please do audio/video recoding of lectures and put it on the web so that if students want to hear/watch again they have a possibility
- poster session earlier
- discussions in mini-groups, for narrower fields
- make sure all lecture halls are air-conditioned
- Don't separate the Hecse posters from the other participants posters if possible (OK, room constraints, but I believe the first session was not as well visited as the second one, causes weird group dynamics)
- video recording of lecture
- adopt Italian food
- more information about the place
- more diverse food (too European)
- the title is misleading
- need more interesting social program
- no big chance to communicate with the gurus
- poster session is somewhat boring
- poster session at the beginning
- maybe not have 4 lectures in any day
- poster session for longer time(poster hang in the area so that students can walk and see them before presentation) at the beginning of the summer school not at the end

In the feedback session on Friday afternoon:

- too long pauses
- poster session earlier
- a guide on the boat
- very broad name for school, could also have meant/expected more machine learning, statistics
- misleading name data analysis
- better description of what the school teaches
- contents very interesting
- expecting more interactivity, now only lectures, organized interactive sessions
- some interactive sessions would no suit everybody
- ides of interactivity
  - workshops – one problem/guru + group work in groups of 8-10 people, brainstorming to get new ideas
  - two sessions, one in the beginning and one a couple of days later

- (shorter summer school with) exercises after the summer school as some people need more time
- longer summer school with exercises
- poster session earlier and presentation of poster (e.g. One minute/poster)
- how to split poster sessions
  - A_L could not follow other A-Ls' posters
  - put up the posters earlier so that people get to know themselves
  - keep posters up for several days, but only have short sessions when presenters are present
  - put picture of presenter next to poster so that you can find the right person
  - put a small version of your poster on your badge for the same reason
- audio/video recoding of the lectures on the web
- social program
  - very long days, not much spare-time
  - shorter breaks perhaps
  - not too long breaks
  - 8 hours of lectures quite tough
  - too much program
  - the saunas were nice and people were eager to go, 2/3 of the students went to the sauna