

Algorithm of the Week – Communicating the Fascination of Algorithms to the Public

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Since the year 2000 the German Federal Ministry of Higher Education and Research (BMBF) arranges a so-called Science Year with the goal to communicate the accomplishments of science to the public. The Science Year 2006 was devoted to informatics. Within this year, the *Fakultätentag Informatik* - as the organisation of computer science departments at German universities - launched the initiative *Algorithm of the Week* (*Algorithmus der Woche*) in which algorithms should be presented in a colloquial language to the public on a weekly basis in the Web. The objective of this activity was to fascinate a non-expert auditory, especially students in secondary school, by beautiful algorithmic ideas and concepts that are the basis of numerous innovations in almost all areas of life.

In December 2005, an editorial board consisting of seven members from different universities was set up and a call for participation was sent out to all departments associated with the Fakultätentag. The activity was widely supported mostly but not only by the algorithms community. Altogether 43 articles written by different authors from various universities in Germany and Switzerland appeared in this series. Each article was reviewed by the members of the editorial board and then edited by a group of students in Aachen. The work of these students was supported by a small BMBF fund. Starting from March 2006, every week one algorithm was presented until the end of the year. The articles were published at the Web addresses

<http://www.informatikjahr.de/algorithmus>
<http://www-i1.informatik.rwth-aachen.de/~algorithmus/>

where they are still available.

The presented articles cover a wide range of algorithmic topics including, e.g., searching and sorting, graph problems, arithmetic, cryptography, approximation and online algorithms as well as randomized algorithms. Exciting insights into many algorithmic problems, their algorithmic solutions and the ideas behind these solutions are given. In most articles, an algorithmic problem is introduced by telling a story drawn from real-life. These stories raise questions like, e.g.,

- How can one find a shortest path between two locations?
- How can one find an exit from a labyrinth?
- How should a group of pirates split a treasure map?
- How can a group of hungry party guests divide a cake in a fair manner?

In most articles a lot of emphasis is put on vivid explanations and often drawings and pictures are used to illustrate the descriptions. Additionally applets are used to demonstrate how a described algorithm works.

The activity received a fair amount of attention in the public. Links on other web pages, reports in newspapers and a few radio interviews increased the number of accesses to the Web site quickly. After a few weeks the number of different users visiting the site increased to a peak of more than 12,000 per month in May 2006. In the first months of 2008 - more than one year after the last algorithm was presented - the average number of users visiting the site is still at a level of about 10,000 per month. The Web site generated mostly positive feedback. Several comments from users can still be found in the site's guest book. It is planned that the Web site with all algorithms and comments stays online at least for the next decade.

In 2007 the editorial board took the initiative to generate a book from the collection of algorithms. All authors agreed to participate in writing the book. Authors were asked to prepare them for publication in a book adding cross references to other articles in the collection and pointers to literature for further reading. Each article was again edited by two reviewers from the editorial board.

In April 2008 the book was published by Springer with the following bibliographic data

Taschenbuch der Algorithmen (Pocket Book of Algorithms)
Vöcking, B.; Alt, H.; Dietzfelbinger, M.; Reischuk, R.;
Scheideler, C.; Vollmer, H.; Wagner, D. (Editors)
Springer, Berlin Heidelberg, 2008
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The book appeared as paperback with 448 pages. All authors and editors waived their honorarium. The book is offered at an especially low price of Euro 19.95 in Springer's eXam.press series.

Several computer science departments of universities in Germany and Switzerland are currently participating in a campaign in which altogether about 5000 copies of the book are distributed free of charge among schools and/or teachers in the local regions around the universities. These copies are sponsored by the departments or associated organisations, and the publisher reduced the price to support this activity. With almost thousand pre-orders by booksellers already before its publication date, the book promises to be a good seller in the stores as well.