

Awarded: Route Planner of the Next Generation

IT at KIT: Dorothea Wagner and Peter Sanders Will be Awarded the “Google Focused Research Award”



To obtain a world-spanning communications network, future route planners will perform real-time calculations of individual routes using different means of transport (Graphic: Institute for Theoretical Informatics, Chair of Algorithmics I, KIT)

Increased traffic, rising energy prices, and higher environmental pollution call for changes in mobility behavior. Most people, however, want to reach their destinations the fastest and yet most comfortable way. KIT professors Dorothea Wagner and Peter Sanders intend to develop a route planner considering such aspects, among other things. Together with Professor Hannah Bast from University of Freiburg, they will be awarded the million-dollar “Google Focused Research Award” for their project “Next Generation Route Planning.”

The team of three researches into algorithms for the next generation of route planners. These will allow calculation of routes in multimodal traffic systems, i.e. in systems integrating different means of transport such as automobiles, trains, buses, planes and ships but also bicycles or one’s own feet. In real-time, the new system adapts to current traffic situations and quickly reacts to particular conditions such as traffic jams or schedule changes. Route planners of the future will not only consider traveling times but also trip costs or environmental impacts. Moreover, users will be enabled to map out their own routes more individually according to their preferences and, for example, choose longer but more attractive routes.

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Professor Dorothea Wagner explains the idea: “To get from Karlsruhe to Vienna, we can choose to take a car, a bus, a train or plane from one of the three nearby airports. To reach the latter, we can travel on public transport, use a car or, depending on where we live, even go by bicycle. Surely, we will prefer a scenic route and we will wish to keep environmental impacts low and reduce travel costs. Such various possible combinations are a great challenge to real-time queries and require new forms of search.”

Professor Dorothea Wagner and Professor Peter Sanders research and teach at Institute for Theoretical Informatics at KIT’s Department of Informatics. Both professors are engaged in studying problems of algorithmics and related areas. The 90,000-dollar Google Research Award, with which exchange with universities is being supported, was already awarded to Peter Sanders in 2008, 2010, and 2011 for his research on route calculation.

By awarding the Google Focused Research Award, the company supports research areas of central interest to informatics worldwide and to Google itself. The award of almost one million dollars is among the highest prizes offered by Google. The laureates, moreover, are allowed to use Google tools, technologies and expertise. So far, 42 such prizes have been awarded worldwide. Among the laureates were two more members of the KIT: Professor Alexander Pretschner from the Chair of Certifiable Trustworthy IT Systems was honored for his research into cloud computing; Professor Stefan Nickel from the Institute of Operations Research was awarded for his work on mathematical optimization.

At this year’s CeBIT in Hannover, 6 to 10 March, 2012, KIT will present current research from information technology and its focuses COMMputation as well as Anthropomatics and Robotics (Hall 9, Stand G33). The first German Department of Informatics will celebrate its 40th anniversary at KIT in autumn.

Karlsruhe Institute of Technology (KIT) is a public corporation according to the legislation of the state of Baden-Württemberg. It fulfills the mission of a university and the mission of a national research center of the Helmholtz Association. KIT focuses on a knowledge triangle that links the tasks of research, teaching, and innovation.

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