



The Hasso Plattner Institute
at CeBIT 2015

Hall 9, D44

Get in touch with us!



Hasso Plattner Institute at a Glance

The Hasso Plattner Institute for Software Systems Engineering GmbH (HPI) at the University of Potsdam is Germany's university excellence center for IT-Systems Engineering. HPI is financed entirely through private funds donated by its founder Prof. Hasso Plattner, who co-founded the software company SAP. HPI is the only university institution in Germany offering the Bachelor's and Master's degree in "IT-Systems Engineering" – a practical and engineering-oriented alternative to conventional computer science studies. Current enrollment is at approximately 480 students. The HPI School of Design Thinking is Europe's first innovation school for university students. It is based on the Stanford model of the d.school and offers 240 places yearly for a supplementary study.

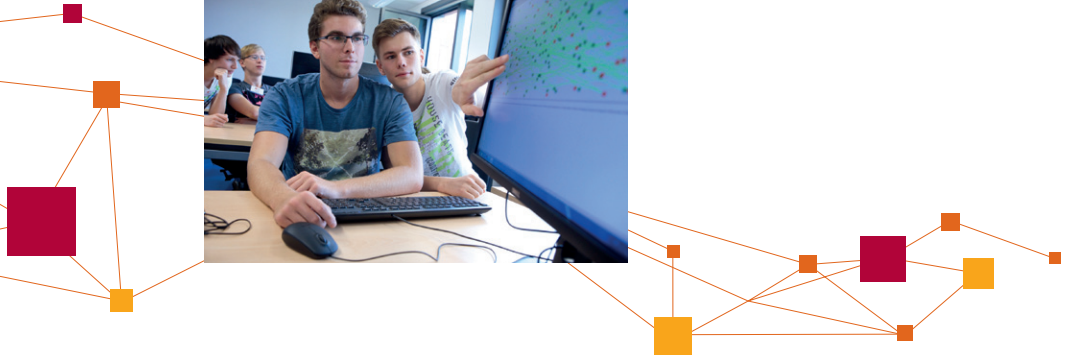
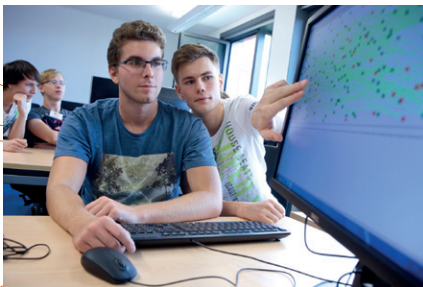
There are a total of ten HPI professors and over 50 guest professors, lecturers and contracted teachers at the Institute. HPI carries out research noted for its high standard of excellence in its nine topic areas. Research work is also conducted at the Potsdam HPI Research School for PhD candidates as well as at its branches in Cape Town, Haifa and Nanjing. HPI teaching and research focuses on the foundation and application of large-scale, highly complex and distributed IT systems. The development and exploration of user-driven innovations for all sectors of life is an additional area of importance. HPI always earns the highest positions in the CHE university ranking. Since September 2012, HPI has provided an interactive Internet learning platform – openHPI. Its free open online courses are available to everyone.



China and HP - A Close Partnership

CeBIT exhibitor HPI (Hall 9, D44) has a close, long-established relationship with its partner country China. In 1987 German professor Werner Zorn was responsible for connecting the Middle Kingdom to the Internet. From 2001 until his retirement in 2007 Zorn held the Chair of Communication Systems at HPI. Professor Christoph Meinel, who became director of HPI in 2004, has been teaching Chinese students online topics on Internet security in English since 2002.

In November 2011, HPI established a branch of its international HPI Research School at Nanjing University, which will be presented at CeBIT. Moreover, with the computer scientists at Shanghai University, HPI regularly conducts Sino-German workshops on the topic of cloud computing. The Potsdam institute, which has operated the first innovation school for university students since 2007, collaborates in the training program of the innovation method "Design Thinking" with the largest media university in the world, the Communication University of China (CUC).



Free Online Courses in Chinese for Chinese IT Professionals

HPI looks forward to presenting its new Chinese learning platform www.openHPI.cn to visitors from its CeBIT partner country, China. Now it's possible for every Chinese to participate in the learning experience comfortably online - anytime and anywhere. A course on the technologies of the World Wide Web is going on during CeBIT. All learning materials, such as lectures, self-tests, homework and exams, are offered in Chinese, with the English instructional videos subtitled in Chinese.

The positive experiences that HPI has made worldwide since the introduction of its "Massive Open Online Courses" (MOOC) in 2012 can now also benefit interested parties in China. The openHPI.cn servers are located at Guofu Data Cloud Computing in Shanghai. SAP Labs China is responsible for the support of Chinese participants, which includes the translation of learning materials into Chinese.

Currently HPI is assessing the possibility of involvement in a United Nations undertaking with its partner Guofu Data; whereby the UN hopes to create a large educational portal based in Shanghai.

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Keeping up with the Digital Transformation Worldwide - with MOOCs

In the digitally evolving IT world, Hasso Plattner Institute helps people not only to keep pace but also to lead the way. HPI's objective is to make students, and people of all ages, fit for the challenges of the rapidly changing field of information technology - and to do this for free. This goal is achieved through the interactive educational platform <https://open.hpi.de>. The platform is unique worldwide as it concentrates exclusively on information technology and offers its courses in German, English and Chinese. HPI offers its platform to other educational providers as well, and in the future will also be offering a "MOOC House." Here, the capacity for Massive Open Online Course (MOOC) is available to all users based on need. Additionally, HPI offers programming courses at openHPI for young people and beginners. What started in September 2014 with a course on the easy to learn programming language Python will continue in spring of 2015 with "Java for Beginners."

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Hitting the Bull's-Eye in Team Sports: The Interactive Tactic Board

Hasso Plattner Institute is presenting an innovative sports analysis software at CeBIT that not only provides statistics on running routes, match results, or scores but can automatically recognize complex tactical patterns in video recordings at lightning speed. This is a prototype of the "interactive tactic board". This innovation helps to determine intuitively, efficiently, and quickly things such as strengths and weaknesses in the offensive/defensive behavior of teams or individual players. This brand-new HPI technology can evaluate both videos of games and sensory data of players. Specially optimized algorithms enable lightning-fast evaluation with the help of Big Data software, which is otherwise used in business or medicine. Thus, coaches and teams are supported in analyzing games and preparing training programs. The user will be able to define a specific game situation and then to instantly view all of the corresponding scenes in game recordings. The tactic board takes the user directly to the time point in the video showing the selected move of the own or of the competing team.

Research Group: Enterprise Platform and Integration Concepts | Prof. Dr. h.c. mult. Hasso Plattner

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Containing Different Epidemics with the Real-Time Analysis of Big-Data

How can life-threatening and fast-spreading infectious diseases such as Ebola, cholera, Lassa fever, meningococcal or measles be contained with the help of Big Data technology? This is what the Hasso Plattner Institute is working on with its scientific partners from infection and epidemiology research in collaboration with African authorities. The status of this project will be reported at CeBIT. Thanks to special mobile applications, experts in affected countries can be centrally coordinated to merge the latest information about suspected cases and contacts into a national database as fast as possible. The technology researched at HPI for the lightning-fast and flexible processing and analysis of large amounts of data (In-Memory Data Management) ensures that current status analyses can be created interactively, trends recognized early and possible developments simulated. These measures help the stakeholders to organize efficient countermeasures to stop the spread of disease.

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Lightning-Fast Profit Analysis via Innovative Financial Simulation Software

How can international managers analyze the impact that up-to-the-minute changes in raw material prices, inflation rates, exchange rates and personal costs will have on the company profits in the future? At CeBIT scientists at Hasso Plattner Institute demonstrate how easily this can be done with a prototype of their newly developed financial simulation software system. It is demonstrated in staged board meeting sessions in an office environment especially designed for decision-makers. Eight computer screens are embedded in a hanging frame above the participants' heads. No monitor obstructs the view of those at the meeting. Using tablet PCs, current corporate data and presentations are displayed live overhead, interactive comments are added as well as voice recognition for research. If a manager asks, "How is profit developing in the first quarter of 2015 with a 15 percent decline in the value of the euro?" he gets an immediate answer in the display of these figures.

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For CIOs: Determining the "Right" Company IT System with Software

In the future chief information officers (CIOs) will be able to identify the "right" IT system for their business with simulation software. Scientists from Hasso Plattner Institute demonstrate at CeBIT how this works with the "Load Simulator". This is a simple interactive tool to compare key characteristics of different database configurations. The HPI solution realistically simulates how thousands of users enter and analyze data at the same time, while simultaneously executing this workload on selected machine configurations. Several performance indicators can be tracked on display instruments such as size, throughput and processing time of data as well as overall utilization of central processing units. In developing the "Load Simulator" HPI researchers worked with a modern high performance computer with over 240 processing cores and 12 terabytes of memory capacity.

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New Image Abstraction System: Turning Videos into Comics

Turning videos and photos instantly into funny sketches, caricatures and hand-drawn looking comic images and sharing them in the net - this has become reality with a technology developed by young scientists at the Potsdam Hasso Plattner Institute (HPI) called "Pic2Comic". With the abstraction solution, demonstrated by HPI at CeBIT, it becomes child's play to alter a picture on an iPhone or iPad and then to share it immediately with friends on social networks. Whether a face, building or landscape, the new, software - which is easier to use than conventional image processing methods - instantly gives its subject the appearance of a schematic drawing, a comic strip or an animated cartoon. The user can perform targeted quality changes and choose between five predefined styles. Behind this technology lies a great deal of mathematics and a clever streaming concept for the fast processing of mass data.

Research Group: Computer Graphics Systems | Prof. Dr. Jürgen Döllner

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Designing the Cities of Tomorrow with Intelligent 3-D Maps

Innovative, intelligent city maps that make the objects of digital three-dimensional city models carriers of important integrated information will be presented by Hasso Plattner Institute at CeBIT. These smart maps can display, for example, the current energy consumption of a building as a façade color. The projected development of population numbers in a neighborhood can be determined by the height of buildings. In information spaces created this way orientation becomes easy, as other basic features, such as road networks, remain visible. With such possibilities of "urban analytics" decision-makers can gain insight into information and the processes of a city as never before. Whether the subject is energy supply, traffic infrastructure, environmental protection or demographic development - Big Data from different sources, such as sensor networks, company software and simulation can be linked with an existing digital 3-D city model. The new HPI software quickly generates the corresponding interactive analysis maps that help in decision making for "smart cities."

Research Group: Computer Graphics Systems | Prof. Dr. Jürgen Döllner

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Tracking Stolen Identity Data in the Internet with the Identity Leak Checker

Enter your e-mail address and then search the network to see if your identity data, such as name, passwords, bank account information or other personal information, is freely accessible - this free security service is presented by Hasso Plattner Institute at CeBIT. The HPI web platform "Identity Leak Checker" is used in the check (<http://sec.hpi.de>). Up to now HPI has informed 10 percent of those who have engaged in an online check that they have been the victim of identity theft. The Potsdam IT institute thus raises awareness by informing the general public about such risks - for example with the online course entitled "Security in the Internet" or with a free two-week workshop, "Secure E-Mail," both at <https://open.hpi.de>.

Research Group: Internet Technologies and Systems | Prof. Dr. Christoph Meinel

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Database Analysis of Software Vulnerabilities and Security Gaps - Live

HPI presents CeBIT visitors its new database for IT attack analysis (www.hpi-vdb.de). The database integrates and combines much of the freely accessible information on the Internet pertaining to software security gaps and problems. At the end of January 2014 there were 67,000 saved sources of information on vulnerabilities in 172,000 affected software programs from 15,000 manufacturers. With the help of the HPI database, Internet users can have their computers checked for software vulnerabilities free of charge. These are the types of vulnerabilities that cyber criminals often use for covert attacks. The system recognizes the browser version used - including common plug-ins - and shows a list of the known security gaps. CeBIT visitors receive a live vulnerability analysis. HPI plans to expand the self-diagnosis to other installed software.

Research Group: Internet Technologies and Systems | Prof. Dr. Christoph Meinel

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Immediate Detection and Analysis of Cyber Attacks

Hasso Plattner Institute is presenting its new Real-time Event Analytics and Monitoring System (REAMS) at CeBIT. With this system HPI Internet scientists collect all information relevant to security events in a network – regardless of whether it originates from servers, routers or work computers. The transferred information is then analyzed in a uniform data format in real-time. Therefore the condition is created that allows also complex cyber attacks on companies and institutions to be detected immediately and analyzed flexibly. In addition, the relation between individual attacks and typical attack-patterns of strikes carried out long ago can be reconstructed and analyzed in detail. Therefore, the technologies developed at HPI also enable IT security experts in industry, science and administration to recognize new attacks that would otherwise remain undetected with conventional solutions.

Research Group: Internet Technologien and Systems

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Secure E-Government Services: A Collaborative Effort by HPI and the Federal Printing Office

Hasso Plattner Institute and its research partner the Federal Printing Office are developing a distributed e-government service in a pilot project. It's a kind of "on-line data safe" for individual and business use, where user data can be safely stored and managed. HPI additionally brings its cloud RAID technology to the Trusted Service Platform of the Federal Printing Office. This ensures that users can authenticate themselves securely on the basis of their personal identification.

With its CloudRAID solution HPI shows - in contrast to other commercial cloud storage solutions - how user data can be stored in a way that makes it unreadable to other servers on the Internet. Concepts for the encryption and distribution of data are used that from a purely conceptual standpoint do not allow the data to be read by others (as is the case with the provider Dropbox, for example). The HPI system does not entrust the data of a user to a single provider in its complete form. Instead, the data is fragmented, encrypted and distributed equally to different suitable storage services based on user requirements.

Research Group: Internet Technologies and Systems | Prof. Dr. Christoph Meinel

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Job & Career: New Career Portal “HPI Connect”

Hasso Plattner Institute presents its newly created career portal “HPI Connect” in CeBIT Hall 9 – where the focus is on “Job & Career” and “Research and Innovation”. Employers can get in touch with HPI students directly at www.hpi.de/connect. Companies can announce internships and job opportunities at the portal, introduce themselves with a company profile and communicate their recruiting events. Those who book a so-called partner package are authorized to access a database of student and alumni profiles from the prestigious Potsdam computer science institute. Approximately 470 bachelor and master students are currently earning their degree in IT-Systems Engineering at HP, with 120 innovators trained in the supplementary Design Thinking program. 120 PhD candidates and more than 1,500 graduates are also members of the target group of the new career portal.

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CeBIT Adventure Days Inspire the Interest of Pupils in d!conomy

Hasso Plattner Institute, in collaboration with the high-tech association BITKOM, is making it possible for approximately 300 interested young people to experience a special, exclusive program at CeBIT free of charge. Participants are divided into small groups and taken to specially chosen booths of well-known exhibitors by their computer science student guides. There they have the opportunity to speak to specialists in junior staff training programs.

Under the umbrella of its HPI Youth Academy, the Potsdam Institute offers customized events for all who want to get informed about studying IT-systems engineering or who are just interested in math and computer science in general. Further information: www.hpi.de/schueler.

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Selected Dates and Events in 2015

APRIL

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| 15. | Future SOC Lab Day at HPI's top research lab |
| 24. | Information Day for Prospective Students /HPI Open House |
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MAY

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| 21. | Corporate fair: HPI Connect |
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JUNE

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| 11. - 12. | 3rd Potsdam Conference on National Cyber Security |
| 12. | Open House at University of Potsdam |
| 17. - 19. | 10th Annual Symposium on Future Trends in Service-Oriented Computing |
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JULY

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| 01. - 02. | Leopoldina HPI Symposium "Big Data in Medicine" |
| 06. | HPI Bachelor Podium |
| 15. | Closing date for student applications to HPI (Bachelor/Master),
more at www.hpi.de/studium . |
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AUGUST

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| 14. - 18. | HPI Summer Camp for high school students |
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