

## Bootstrapping JISA—Letter from the Editors-in-Chief

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It was less than 20 years ago when the Internet began to become available to the common citizens. Within this short period, it became ubiquitous in the lives of a significant part of the human population, affecting the way we seek, receive, access, and produce information, the way we consume goods, the way we interact with other people, and the way we think.

The young generations love the Internet and have difficulties imagining a life without it. The way they learn, have fun, and love is influenced by the network. Older generations remember very well how the world was before it; but, for them, the benefits it brought are clear. In many aspects, life is more interesting with the Internet. Nevertheless, the Internet is also a reason for worries, mostly with respect to privacy and security, the difficulty to filter relevant information in an endless ocean of data, the possibility of cybercrimes, and even psychological and social problems. Among the major challenges the Internet faces today are the threats to privacy and the difficulty in reaching a wider portion of the world population. According to recent studies, more than 2/3 of humanity have no access whatsoever to the Internet.

To produce the Internet as we know today, many scientific and technological advances were needed, benefiting from multiple areas of Computer Science, including Computer Theory, Networking, Distributed Systems, Databases, Software Engineering and Architecture, and others.

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The Journal of Internet Services and Applications (JISA) now released by Springer aims at being a high-quality peer-reviewed international journal featuring innovative scientific papers addressing both theory and practice and covering all aspects of the Internet architecture, protocols, services, and applications. JISA topics include, but are not limited to: networking protocols and architectures; Web protocols, standards, and development; security and privacy; middleware systems and frameworks; mobile, ubiquitous, pervasive, and context-aware computing; and Internet/Web applications.

In this inaugural issue, we are honored to feature invited papers from world renowned scientists who have contributed significantly to the advancement of science and technology within the last decades. The JISA first issue starts with a Foreword by the Turing Awardee, Vinton Cerf, who was one of the major names behind the creation of the Internet and its TCP/IP protocol suite in the early 1970s. Cerf reflects on the advances in information processing in the last half-century brought by the technologies around the Internet and the World Wide Web. He also brings attention to the current limitations of the Internet and the major problems that must be addressed by the research community.

Qi Zhang, Lu Cheng, and Raouf Boutaba provide an overview of the new, emerging field of Cloud Computing, describing the state-of-the-art and its major research challenges. Even though Cloud Computing is already a reality in the software industry, with major companies already providing cloud infrastructure and services, scientific research on this theme is still in its infancy. The paper helps us to better understand the design challenges of cloud computing, paving the way for further research in the field.

Panagiotis Papadimitriou, Ali Dasdan, and Hector Garcia-Molina describe a novel technique for detecting anomalies in the very large graphs used by current search engines to monitor the Web evolution. Five Web graph sim-

ilarity schemes are empirically evaluated using Web graphs with tens of millions of nodes generated by the Yahoo! search engine.

Mahadev Satyanarayanan, Rahul Sukthankar, Lily Mumert, Adam Goode, Jan Harkes, and Steve Schlosser discuss the unique strengths and storage access characteristics of discard-based search, a new approach to searching the content of complex, unlabelled, non-indexed data such as digital photographs, medical images, and real-time surveillance data. The paper reports the lessons learned from applying their open-source middleware, OpenDiamond, in the Health Sciences domain.

Jules White, Siobhan Clarke, Christin Groba, Brian Dougherty, Chris Thompson, and Douglas Schmidt target cyber-physical applications based on mobile Internet devices that collect sensor data from the real world and communicate it back to Internet services for processing and aggregation. Their paper discusses the R&D challenges and solutions for mobile cyber-physical applications and supporting Internet services.

Joon-Sang Park, Uichin Lee, and Mario Gerla describe a new method for reliable dissemination of video streams in case of emergencies in vehicular communications in which an ad hoc network is composed dynamically by using, for example, cars and trucks in a highway. The paper describes a method for reliable dissemination of video streams that is robust in the face of disconnections. In particular, the method can deliver multimedia files even over intermittent connec-

tions with a combination of network coding and “data muling” (using vehicles in the opposite direction).

Last but not least, the paper by Luiz Fernando Soares, Marcelo Moreno, Romualdo Costa, and Marcio Moreno shows how multiple digital TV systems such as IPTV, WebTV, Internet TV, Satellite DTV, and P2P TV are converging towards a single platform model. The paper uses the Ginga open-source middleware, compliant with the Brazilian–Japanese digital TV standard, as an example to discuss the proposed solutions to achieve this convergence.

As JISA Editors-in-Chief, we believe that these seven papers demonstrate the high-quality, excellence, and relevance that we expect for the journal. Our goal is that JISA will emerge as an active and dynamic forum for the dissemination of innovative ideas that will further help the development of the Internet, making it an even richer channel for human expression.

Finally, JISA is thankful for the support and sponsorship provided by the Brazilian Internet Steering Committee ([NIC.br](http://NIC.br)), the National Computer Networks Laboratory (LARC), and the Brazilian Computer Society (SBC) that made possible this initiative.

We wish you will enjoy the journal and help making it a great forum for Internet Science and Technology.

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