W4A 2011

International Cross-Disciplinary Conference on Web Accessibility Hyderabad, India 2011

http://www.w4a.info/

#w4a11

Endorsed by the IW3C2
International World Wide Web Conference Committee

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Foreword

The International Cross-Disciplinary Conference on Web Accessibility (W4A) was started in 2004 with the aim of accelerating research activities towards an accessible World Wide Web. Through previous conferences, a growing number of participants from academia, industry, government and non-profit organisations around the world have gathered to exchange their latest research results, widen their perspectives through discussions with their peers, and establish future research agendas across disciplines and sectors. Each year, we choose a theme to encourage a focus on the emerging challenges in a particular area of accessibility, and for W4A 2011 we posed the question: "Crowdsourcing the Cloud: An Inclusive Web by All and For All?"

Cloud-computing and the applications deployed on the cloud facilitate collective intelligence and crowdsourcing phenomena, where millions of users can contribute to a common goal. Following these approaches, a number of successful projects that focus on web accessibility have been released in recent years. These developments range from platforms to collectively removing accessibility barriers to making assistive technologies widespread and available for all. These preliminary approaches such as online screen-readers and accessibility repairing applications have yielded promising results towards an inclusive web by removing both economical and accessibility barriers. In order to develop the cloud to its full potential as far as accessibility is concerned, there are still several research questions that should address the weak points and challenges in a timely manner in order to create an inclusive Web: will crowdsourcing the cloud lead us to an inclusive Web by all and for all? Will crowdsourcing the cloud remove accessibility barriers for all? Will crowdsourcing the cloud make the Web accessible or inaccessible?

This year, we a had a record of submissions, 6 technical papers and 16 communication papers were selected from 34 submissions through peer review process. As usual, we received submissions from researchers worldwide, spanning Asia, Europe, North America, Oceania and South America. The coverage of submissions was comprehensive across Web accessibility research fields: evaluation and repair, user modeling and adaptive interfaces, access to rich and dynamic content and accessibility engineering, amongst others. Acceptance rate of technical papers was 33%. In addition, we received 9 submissions to The Web Accessibility Challenge event. The acceptance rate as well as the thorough review process led to a high quality number of papers that ensures the excellence of the W4A conference. As of March 2011, each W4A paper has been downloaded 452 times on average and has 2.87 citations according to the ACM Digital Library. These data confirm that W4A does not only provide excellent visibility to papers but also enables strong scientific impact.

Manish Gupta will be the main keynote of this year's conference. Manish is the Director of IBM Research - India and Chief Technologist for IBM India/South Asia. He leads a team developing breakthrough technologies underlying innovation in Services, Software and Systems, and is leading the IBM Research activities across the world in the Mobile Web area. His keynote entitled "Spoken Web: A Mobile Cloud based Parallel Web for the Masses" will describe the goal of creating a new world wide web for the masses in developing countries, accessible over the telephone network and hosted in a cloud by facilitating easy creation of user-generated content that populates 'voice sites'.

This year we will also be hosting the 'William Loughborough' After Dinner Speech, where we feel that the casual environment will allow for an extended and lively discussion among the conference attendees. This year's Dinner Keynote will be Bebo White. Bebo is a Departmental Associate (Emeritus) at the SLAC National Accelerator Laboratory, the U.S. national laboratory for high-energy physics and basic energy science at Stanford University. Working as a computational physicist, he first became involved with the emerging Web technology while on sabbatical at CERN in 1989 and we are sure he will provide a lot of valuable insights on crowdsourcing the cloud for accessibility.

Many people contributed to the success of this conference. We would like to thank the programme committee for their exceptional work and dedication in the review process. We would also like to thank the authors for their excellent work and delegates for their participation. Finally, we would like to thank our sponsors: ACM SIGACCESS; Mozilla Foundation; Google; Microsoft; IBM and the Zakon Group.

Markel Vigo, Julio Abascal and Leo Ferres, March 2011

Conference Programme

Monday 28th March 2011

Tuesday 29th March 2011

Session 1: W4A Google Student Awards (9:00-9:30)

Session 2: Web Accessibility Challenge (9:30 – 10:00 & 10:30 – 12:00)

Session 3: Accessing to Rich and Dynamic Content (13:30 – 15:00)

Session 4: Innovative Techniques and Studies (15:30 – 16:30)

Awards and Closing (16:30 – 17:00)

Conference Information

Conference proceedings have the ACM ISBN 978-1-4503-0476-4 and include abstracts and notes sections for all our technical, communications and challenge presentations. The conference USB stick comprises all papers.

Publications

The conference proceedings will be published as part of the ACM International Conference Proceedings Series and will be available at the ACM Digital Library. Authors of the best papers at W4A 2011 will be invited to submit extended versions to a special issue of New Review of Hypermedia and Multimedia (NRHM). The NRHM provides a focus for research and a source of information on practical and theoretical developments in hypermedia, hypertext, interactive multimedia and related technologies. These highly innovative systems allow the integration of images, sound, text and data to form powerful tools for information retrieval; by linking multimedia with mass storage, they can provide users with a more diverse and richly textured information environment.

History

In our previous conferences, all papers were reviewed by three of our programme committee and we accepted an average of around 35% of the submissions. In our previous conferences, we welcome between 30–50 attendees to each conference from a diverse set of companies ranging from the Governors of the US Federal Reserve to Healthcare Trusts and car manufacturers. We publish ISBNed ACM proceedings and various Special Issues of respected journals within the field. Finally, the conference findings are published in the ACM ACCESS Computers and Accessibility newsletter. We also solicit sponsorship from the ACM SIGACCESS, ACM SIGWEB, IBM Research, Adobe, Mozilla Foundation, Google, Microsoft and the like. You can find information on the previous conferences and workshops from their archived sites:

- W4A 2010, Raleigh, NC, USA (`http://www.w4a.info/2010/`).
- W4A 2009, Madrid, Spain (`http://www.w4a.info/2009/`).
- W4A 2008, Beijing, China (`http://www.w4a.info/2008/`).
- W4A 2007. Banff, Canada (`http://www.w4a.info/2007/`).
- W4A 2006, Edinburgh, UK (`http://www.w4a.info/2006/`).
- W4A 2005, Chiba, Japan (`http://www.w4a.info/2005/`).
- W4A 2004, New York, NY, USA (`http://www.w4a.info/2004/`).

Lunch and Coffee

The conference lunch and coffee will be held together with the World Wide Web (WWW) conference. The WWW morning coffee break is scheduled for 10:00-10:30, the lunch is scheduled for 12:00 to 13:30 and the afternoon coffee break is scheduled for 15:00-15:30.

Web Accessibility Challenge

Once again, the W4A Accessibility Challenge, generously sponsored by Microsoft since 2008, has had an enthusiastic reception in this year's edition. Nine high quality contributions from Greece, Italy, Spain, United Kingdom, and United States of America are taking part in the challenge. Contributions are focused in different areas within the accessibility realm, but highly focusing on pushing forward the state of the art in accessibility evaluation and repair. There are two different prizes in the W4A Accessibility Challenge: the Judges Prize and the Delegates Prize. The Judges Prize is awarded by a recognized panel of experts in their domain. This year, we are honoured to have the participation of Mike Paciello, Founder and President of The Paciello Group; Shadi Abou-Zahra, Activity Lead at the Web Accessibility Initiative of the World Wide Web Consortium; Greg Gay, Researcher at the Inclusive Design Research Centre (OCAD University) and Project Manager for ATutor; Cynthia Shelly, Senior Technical Strategist for Accessibility at Microsoft; and Giorgio Brajnik, Assistant Professor in Computer Science and Research Scientist at the University of Udine. As this distinguished list shows, the judges have different backgrounds such as research, industry, and academia.

The Delegates Prize, on the other hand, is awarded by the audience of the main W4A Conference, by secret ballot and on-site after listening to the Challenge submissions. This is an interesting and exciting part of the W4A Conference, since authors can make a case for their Accessible Technologies and the results may be different from the Judges decision. In general, all authors will receive valuable feedback from the conference attendees, and the possibility of networking with industry and government regarding their technologies.

Rui Lopes and Paola Salomoni
March 2011

W4A Google Student Award

Thanks to continued support of Google, this year marks the 2nd Google Student Award event. The Award allows talented students with limited funding to attend the W4A Conference, present their research, and get early feedback from top researchers in the field of Web Accessibility. The focus of this year's competition was on the use of cloud-computing for web accessibility. The quality of this year's submissions made the selection of the two winners very difficult, but, after a long debate, the committee chose the two students whose research was most promising in terms of its depth and potential impact.

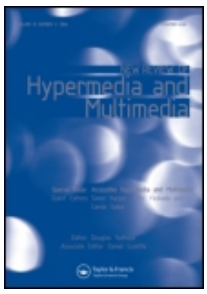
The W4A Organizing Committee is happy to introduce the 2011 winners: Vivienne Conway (Edith Cowan University, Australia) and Vasile Topac (Polytechnic University of Timisoara, Romania). Both Vivienne and Vasile will give presentations of their work at W4A 2011; their extended abstracts are included in these proceedings. We are most thankful to Google Inc for their generous support, and we look forward to their ongoing involvement in W4A.

Yevgen Borodin and Jeffrey Bigham
March 2011

Special Issue - Crowdsourcing the Cloud: An Inclusive Web by All and For All?

Each year, selected authors of outstanding papers accepted for presentation at W4A are invited to submit extended versions of their papers to a W4A Special Issue of a journal relevant to web accessibility research and development. This year, we are pleased to announce that The New Review of Hypermedia and Multimedia (NRHM) will be publishing the W4A special issue. Authors will shortly be invited to extend their papers to develop further the ideas originally presented in their W4A paper, or present new research; all revised submissions will undergo a further peer-review process before publication.

About the NRHM Journal



The New Review of Hypermedia and Multimedia is an ISI Thompson Indexed journal published by Taylor & Francis that provides a focus for research and a source of information on practical and theoretical developments in hypermedia, hypertext, interactive multimedia and related technologies. These highly innovative systems allow the integration of images, sound, text and data to form powerful tools for information retrieval; by linking multimedia with mass storage, they can provide users with a more diverse and richly textured information environment. The New Review of Hypermedia and Multimedia covers the following key themes: the conceptual basis of hypertext systems; cognitive aspects; design strategies; intelligent and adaptive hypermedia; automatic authoring; personalisation, knowledge organization systems and services; the semantic web; Web 2.0; link metrics; link dynamics; time and synchronisation; multimedia authoring tools; navigation and browsing; search systems; content-based retrieval; studies of information seeking behaviour; testing and evaluation; user interfaces; multi-modal interaction; experience design; web accessibility; physical hypermedia; virtual environments; literary and creative hypermedia; applications in e-learning, information management, digital libraries, social networking, publishing, commerce, the professions and public administration.

The New Review of Hypermedia and Multimedia appears in both print and digital format.
Available at http://www.tandf.co.uk/journals/titles/13614568.asp

Reviewing Process

All papers will be peer reviewed by W4A reviewers, experts in the field, and in consultation with the Editor-in-Chief of NRHM.

Special Issue Editor

Leo Ferres
Universidad de Concepciòn, Concepción, Chile.

Opening

Notes

Keynote

Spoken Web: A Mobile Cloud based Parallel Web for the Masses

Manish Gupta

Director of IBM Research - India and Chief Technologist for IBM India/South Asia

In India and several other countries, most notably in Africa, the penetration of the personal computer and the internet remains relatively low. However, there has been a huge surge in the adoption of simple mobile phones (there are over 700 million mobile phone numbers in India), and this penetration continues to grow at a fast pace. We will present Spoken Web, an attempt to create a new world wide web for the masses in these countries, accessible over the telephone network and hosted in a cloud. The Spoken Web platform facilitates easy creation of user-generated content that populates 'voice sites', and allows contextual traversal of voice sites interconnected via hyperlinks based on the Hyperspeech Transfer Protocol. We present our experience from pilots conducted in villages in Andhra Pradesh, Gujarat, and other states in India. These pilots demonstrate the ease with which a semi-literate and non-IT savvy population can create voice sites with locally relevant content, including schedule of education/training classes, agricultural information, and entertainment related content, and their strong interest in accessing this information over the telephone network. We describe several outstanding challenges and opportunities in creating and using a Spoken Web for facilitating exchange of information and conducting business transactions.

Notes:

Session 1: Evaluating Accessibility

Development and Trial of an Educational Tool to Support the Accessibility Evaluation Process

Christopher Bailey; Elaine Pearson

Teesside University, United Kingdom

This paper describes the design and development of a web accessibility knowledge management tool, known as the Accessibility Evaluation Assistant (AEA) designed to assist novice auditors in the process of an accessibility evaluation. The software incorporates a structured walkthrough approach to guide the auditor through a series of checks for established accessibility principles with the goal of conducting a comprehensive accessibility evaluation. The tool also offers the functionality to tailor the evaluation and prioritise checks based on the needs of two different user groups, or the specific content features of the website. The tool has recently been trialled with a group of 38 undergraduate computing students studying an Accessibility and Adaptive Technologies module with the aim of assessing its reliability and accuracy to validate the method. Some initial conclusions about the reliability and validity of the method and the pedagogical implications of the tool are presented. The results will help highlight the checks that can easily be verified by novices, and those that require a more detailed understanding of accessibility; require informed judgement; or are open to individual interpretation.

Notes: *Technical Paper*

Developing Hera-FFX for WCAG 2.0

José L. Fuertes[1]; Emmanuelle Gutiérrez[2]; Loc Martínez[1]

[1]Technical University of Madrid, Spain
[2]Sidar Foundation, Spain

WCAG 2.0 was published in December 2008. It has many differences to WCAG 1.0 as to rationale, structure and content. Two years later there are still few tools supporting WCAG 2.0, and none of them fully mirrors the WCAG 2.0 approach organized around principles, guidelines, success criteria, situations and techniques. This paper describes the on-going development of an update to the Hera-FFX Firefox extension to support WCAG 2.0. The description is focused on the challenges that we have found and our resulting decisions.

Notes:

Technical Paper

On Web Accessibility Evaluation Environments

Nádia Fernandes; Rui Lopes; Luís Carriço

LaSIGE/University of Lisbon, Portugal

Modern Web sites leverage several techniques (e.g. DOM manipulation) that allow for the injection of new content into their Web pages (e.g., AJAX), as well as manipulation of the HTML DOM tree. This has the consequence that the Web pages that are presented to users (i.e., *browser* environment) are different from the original structure and content that is transmitted through HTTP communication (i.e., *command line* environment). This poses a series of challenges for Web accessibility evaluation, especially on automated evaluation software. This paper details an experimental study designed to understand the differences posed by accessibility evaluation in the Web browser. For that, we implemented a Javascript-based evaluator, *QualWeb*, that can perform WCAG 2.0 based accessibility evaluations in both browser and command line environments. Our study shows that, in fact, there are deep differences between the HTML DOM tree in both environments, which has the consequence of having distinct evaluation results. Furthermore, we discovered that, for the WCAG 2.0 success criteria evaluation procedures we implemented, 67% of them yield false negative answers on their applicability within the *command line* environment, whereas more than 13% of them are false positives. We discuss the impact of these results in the light of the potential problems that these differences can pose to designers and developers that use accessibility evaluators that function on *command line* environments.

Notes:

Technical Paper

Session 2: Adaptation and Profiling for Accessibility

Augment browsing and standard profiling for enhancing Web accessibility

Silvia Mirri; Paola Salomoni; Catia Prandi

University of Bologna, Italy

The opportunity of effectively tailoring Web resources presentation -depending on each single user needs and preferences- represents a challenge and a necessity for accessibility and inclusion. On the Web, customizing means transcoding content according to some user and/or device (contextual) settings. Such a profiling refers to devices constraints, user habits, skills, different needs (or tastes) about interaction, in order to drive all the necessary procedures for content (re)shaping. The usual set up that users provide for assistive tools such as screen readers or speech-to-text applications, is a common practice (and a typical example) for a subjective, better enjoyment of resources. This work describes an augment browsing system, which allows users to set up their needs and preferences about Web pages presentation from the browser interface and is capable to automatically modify (transcode) content, according to such settings at client-side. The system is based on a widespread Web browser extension (GreaseMonkey) and well-known standards have been utilized to represent users settings. Finally a case-study of the system has been assessed on a widespread social network, also taking into account some evaluations about accessibility by a group of blind persons.

Notes: *Technical Paper*

Application of Content Adaptation in Web Accessibility for the Blind

Pauli P.Y. Lai

The University of Hong Kong, Hong Kong

While many people enjoy surfing the Web without any difficulty, the blind people could only read webpage with the help of screen reader which reads aloud the whole webpage. This approach is quite time consuming for them to get to their interested content even though some screen readers allow tabbing through links or headings. It is proposed to adapt the webpage into different logical sections, each would be given a descriptive heading and a number so that the user can enter the number in order to get into the details of that section. The whole idea is like converting the webpage into an IVRS (Interactive Voice Response Systems) so that the blind people can access the webpage using mobile phone by hearing the index page and getting into details by pressing the corresponding number on the key pad.

Notes: *Communication Paper*

An adaptive videos enrichment system based on decision trees for people with sensory disabilities

José Francisco Saray Villamizar; Benoît Encelle; Yannick Prié; Pierre-Antoine Champin

Universiteé de Lyon, France

The ACAV project aims to improve videos accessibility on the Web for people with sensory disabilities. For this purpose, additional descriptions of key visual/audio information of the video, that cannot be perceived, are presented using accessible output modalities. However, personalization mechanisms are necessary to adapt these descriptions and their presentations according to user interests and cognitive/physical capabilities. In this article, we introduce the concepts needed for personalization and an adaptive personalization mechanism of descriptions and associated presentations is proposed and evaluated.

Notes: *Communication Paper*

Estimating Dyslexia in the Web

Ricardo Baeza-Yates[1,2]; Luz Rello[2]

[1]Yahoo! Research, Spain
[2]Univ. Pompeu Fabra, Spain

In this study we present an estimation of texts containing English dyslexic errors in the Web. A classification of lexical errors is proposed and unique dyslexic errors are distinguished from other kind of errors due to spelling and grammatical errors, typos, OCR errors and errors produced when English is used as a foreign language. A representative sample of each kind of error is used to calculate a lower bound for the prevalence of dyslexia in the English Web. Although dyslexia has been studied in the context of Web accessibility, to the best of our knowledge, an estimation of Web texts containing dyslexic errors was unknown. Our results are useful to tackle future work in Web accessibility among dyslexic users focusing not only in the interface but also in the text content.

Notes: *Communication Paper*

Session 3: Engineering and Designing Web Accessibility

Accessibility at Early Stages: Insights from the Designer Perspective

Adriana Martín[1,2]; Alejandra Cechich[1]; Gustavo Rossi[3]

[1]Universidad Nacional del Comahue, Argentina
[2]Universidad Nacional de la Patagonia Austral, Argentina
[3]Universidad Nacional de La Plata and Conicet, Argentina

Usually, a huge number of tools and proposals help developers assess Accessibility of Web applications; however, looking from the designer perspective, there is no such a similar situation. It seems that creating accessible Web sites is more expensive and complicated than creating Web sites and then assessing/modifying them. Although this feeling may be largely true, the benefits of modeling Accessibility at early design stages outweigh the needs of a developer to implement that Accessibility. A designer can learn the basics of Web Accessibility and then he/she should be able to incorporate this knowledge into his/her software architecture. The point is to have an idea of how to do so from the beginning. In this paper, we briefly introduce our proposal to model Web Accessibility by moving from abstract to concrete architectural views using aspect-orientation. Our approach takes advantages of modeling Accessibility as an aspect-oriented concern, which is independently treated but related to architectural pieces. We illustrate the approach with a case study and elaborate some insights from the designer perspective.

Notes: *Technical Paper*

An Integrative Accessibility Engineering Approach Using Multidimensional Classifications of Barriers in the Web

Diana Ruth-Janneck

Technical University of Dresden, Germany

This paper proposes classifications of barriers in various dimensions we registered in the German study "Web2.0/ Accessible" regarding the use of web2.0 applications by persons with disabilities. These classifications define dimensions and aspects of barriers, which can be used for the development and evaluation of web applications concerning accessibility issues. Various categories of disabilities and their usage pattern concerning web applications are included in the study for the first time. Decision makers, web developers and editors are able to deduce which barriers emerge and how they can be overcome. A contribution to the conception, design and evaluation of accessible web applications is made with the help of these classifications. Due to the integration of the data into a proven process model, an integrative accessibility engineering approach is enabled and presented here.

Notes: *Communication Paper*

Accessible Icon Graphic Design in Enterprise Applications

Eric Stilan; Amy Chen; Lulit Bezuayehu

Oracle, United States

We describe the challenges of designing accessible icons in enterprise software applications, such as designing status and severity indicators that retain meaning in a small 16x16 pixel icon without using color as the only visual means of conveying information.

Notes: *Communication Paper*

Crosschecking the Mobile Web for People with Visual Impairments

Luís Carriço; Rui Lopes; Rogério Bandeira

LaSIGE/University of Lisbon, Portugal

This paper presents a reflection on the assessment of mobile Web content for people with disabilities. It proposes a rationale for an evaluation framework considering: (1) the coherent merge of state of the art guidelines on Web accessibility and mobile best practices; and (2) the usage of current and prospective practices particularly for people with visual impairments. It also presents the preliminary results of a questionnaire that validates that rationale laying the grounds for a coherent evaluation approach.

Notes: *Communication Paper*

‘William Loughborough’ After Dinner Speech

Accessibility Challenges of the Next Decade: Cloud and Mobile Computing and Beyond

Bebo White

A valuable body of research and best practices has been developed to address Web Accessibility to insure that all users of the technology have equal access to information and functionality. Significant effort has led to the development of rigorous guidelines addressing this goal. However substantial challenges lay ahead as the Web moves beyond the desktop and computing models evolve. Cloud computing promises that unlimited access to computing resources (processing power, storage, etc.) will be ubiquitous, economical and available to all. Mobile computers in the form of smart phones and tablets already surpass in sheer numbers all other computing systems. What will the challenges be to insure that cloud and mobile computing systems are genuinely accessible? What lessons can be learned from the Web accessibility efforts?

Notes:

Session 1: W4A Google Student Awards

Towards a Universal Accessibility for Textual Information

Vasile Topac

Politehnica University of Timisoara, Romania

This paper describes how the major textual information representations and access limitations can be structured in a universal view. A web platform composed of web services and technologies is proposed as a solution for the identified access limitations. The importance of web services orchestration is emphasized in order to obtain novel and useful results in the area of accessibility. Other benefits, like universal accessibility evaluation, resulting from this universal view are listed.

Notes: *Google Student Award Paper*

Website Accessibility in Australia and the Australian Government's Web Accessibility *National Transition Strategy*

Vivienne Conway

Edith Cowan University, Australia

The Australian Government has implemented the *Web Accessibility National Transition Strategy* (NTS) which mandates compliance with WCAG 2.0. Those sites not covered by the NTS fall within the purview of the Australian Human Rights guidelines, which recommend WCAG 2.0 AA as a minimum standard. This research will assess this strategy over the period of its implementation as well as building a framework to assist other organisations in their efforts to build more accessible websites.

Notes: *Google Student Award Paper*

Session 2: Web Accessibility Challenge

Voting Forum for the Delegate Award Sponsored by Microsoft

Please nominate one of the candidates below for the "Delegate's award":

1. **Improving the Accessibility of Dynamic Web Content for Older Users**
   Darren Lunn; Simon Harper
   Video: `http://www.youtube.com/watch?v=olkGmgyLI_A`
2. **Web Educational Services for All: The APEINTA project**
   Ana Iglesias; Lourdes Moreno; Belén Ruiz; José Luis Pajares; Javier Jiménez; Juan Francisco López; Pablo Revuelta; Julián Hernández
   Video: `http://www.youtube.com/watch?v=8NAQwRR2c1o`
3. **The AccDC Enterprise API for Advanced UI Automation**
   Bryan Garaventa
   Video: `http://www.youtube.com/watch?v=0Q2o36GlU4k`
4. **WaaT: Personalised Web Accessibility Evaluation Tool**
   Theofanis Oikonomou; Nikolaos Kaklanis; Konstantinos Votis; Grammati-Eirini Kastori; Nikolaos Partarakis; Dimitrios Tzovaras
   Video: `http://www.youtube.com/watch?v=8RkJcpRH9RA`
5. **HapticRiaMaps: Towards Interactive exploration of Web World maps for the Visually Impaired**
   Nikolaos Kaklanis; Konstantinos Votis; Panagiotis Moschonas; Dimitrios Tzovaras
   Video: `http://www.youtube.com/watch?v=1wnBWpeGiWM`
6. **Farfalla project: browser-based accessibility solutions**
   Andrea Mangiatordi; Harpreet Singh Sareen
   Video: `http://dl.dropbox.com/u/6327342/Farfalla_W4A_challenge_nomusic.mov`
   Demo: `http://farfalla-project.org/live-demo/`
7. **Crowdsourcing Correction of Speech Recognition Captioning Errors**
   Mike Wald
   Video: `http://www.synote.org/synote/recording/replay/55564`
8. **Southampton Accessibility Tools**
   Mike Wald; E.A. Draffan; S. Skuse; R. Newman; C. Phethean
   Video: `http://www.synote.org/synote/recording/replay/55576`
9. **AccessibleNews DAISY: Newspapers in DAISY**
   Gaurang Kanvinde; Saurabh Gupta
   Video 1: `http://www.youtube.com/watch?v=ZkA0wHNp97E`
   Video 2: `http://www.youtube.com/watch?v=TwPqe2stJNI`
   Demo: `http://www.accessiblenews.co.in/daisy`

Cut here ✂ .....

Delegates Choice:	

Improving the Accessibility of Dynamic Web Content for Older Users

Darren Lunn; Simon Harper

University of Manchester, United Kingdom

The Web is changing. The much vaunted Web 2.0 sees once static pages evolving into hybrid applications. Content that was once simple to surf is now becoming increasingly complicated due to the many areas of dynamic content "dotted" throughout the page. In previous studies, we have shown that unlike younger users, older users have more varied interaction patterns when using dynamic content. In addition, some older users are not aware of what to expect when interacting with dynamic content and show signs of hesitancy and uncertainty when completing tasks. In this paper, we present a tool designed to assist older uses as they use Web 2.0 content and reduce the hesitancy and frustration that was previously identified.

Notes: *Challenge Paper*

Web Educational Services for All: The APEINTA project

Ana Iglesias[1]; Lourdes Moreno[1]; Belén Ruiz[1]; José Luis Pajares[2]; Javier Jiménez[2]; Juan Francisco López[2]; Pablo Revuelta[2]; Julián Hernández[3]

[1]Universidad Carlos III de Madrid, Spain
[2]Spanish Centre of Captioning and Audio Description (CESyA), Spain
[3]Orange R&D, Spain

This paper presents the web-based educational services included in the APEINTA project. The main aim of APEINTA is to avoid barriers among the students and the education. Taking into account the advantage of cloud computing paradigm, the next web-based services are proposed: First, a captioning service, so students with hearing disabilities, for instance, could access to the verbatim speech of the teachers, even in a remote location; Second, a text-to-speech service, so students with speaking problems could participate in the class or in oral discussions or meetings, for instance, just writing in their personal devices; Third, a web-based educational system, so every student can access the pedagogical resources with time and location independency.

Notes:

Challenge Paper

The AccDC Enterprise API for Advanced UI Automation

Bryan Garaventa

WhatSock.com, United States

This paper describes the purpose and functionality of the AccDC Enterprise API for Advanced UI Automation at WhatSock.com, which was founded to promote the concept and utilization of Automatically Accessible Technologies ("AAT") as an attainable global standard.

Notes:

Challenge Paper

WaaT: Personalised Web Accessibility Evaluation Tool

Theofanis Oikonomou[1]; Nikolaos Kaklanis[1]; Konstantinos Votis[1]; Grammati-Eirini Kastori[1]; Nikolaos Partarakis[2]; Dimitrios Tzovaras[1]

[1]Informatics and Telematics Institute Centre for Research and Technology Hellas, Greece
[2]Foundation for Research and Technology-Hellas, Greece

Our approach introduces an advanced and new personalized Web accessibility evaluation methodology, allowing for Web content accessibility evaluation regarding different selectable disability profiles (impairments, personas) as well as Assistive technologies and devices. We define an evaluation approach based on the Web Content Accessibility Guidelines 2.0 and the Barrier Walkthrough, with the goal of providing support to Web developers and designers to conduct rapid, yet specialized, accessibility assessments focused on different disability types and user preferences for Web applications.

Notes:

Challenge Paper

HapticRiaMaps: Towards Interactive exploration of Web World maps for the Visually Impaired

Nikolaos Kaklanis; Konstantinos Votis; Panagiotis Moschonas; Dimitrios Tzovaras

Informatics and Telematics Institute Centre for Research and Technology Hellas, Greece

Existing information on the Web and especially maps are graphically-orientated and in most cases visually impaired users have very restricted access and find it difficult to recognize this kind of visual representation. For visually impaired people and especially for blind users alternative information presentation ways must be found, which would replace visual information. We investigate the potential role of haptics in augmenting the visualization of maps exist on the Web. *HapticRiaMaps* is a free open source web application enforces the accessibility of maps for the visually impaired users. Issues of multimodal interaction, relevant sonifications, and haptic technologies enable efficient map exploration of preferable and well known 2D maps (retrieves maps from OpenStreetMap web application).

Notes:

Challenge Paper

Farfalla project: browser-based accessibility solutions

Andrea Mangiatordi[1]; Harpreet Singh Sareen[2]

[1]University of Milano Bicocca, Italy
[2]Punjabi University, Patiala, India

Traditionally, Assistive Technology is deeply linked to the particular system on which a single solution runs. Cloud computing seems to be a promising approach, since solutions and services are no longer tied to a particular system. The Farfalla project is a step towards cloud-based Assistive Technology, for the creation of an *inclusive* web where accessibility solutions can be deployed together with contents.

Notes:

Challenge Paper

Crowdsourcing Correction of Speech Recognition Captioning Errors

Mike Wald

University of Southampton, United Kingdom

In this paper, we describe a tool that facilitates crowdsourcing correction of speech recognition captioning errors to provide a sustainable method of making videos accessible to people who find it difficult to understand speech through hearing alone.

Notes: *Challenge Paper*

Southampton Accessibility Tools

Mike Wald; E.A. Draffan; S. Skuse; R. Newman; C. Phethean

University of Southampton, United Kingdom

In this paper, we describe three tools that facilitate 'crowdsourcing' open source development to help overcome accessibility, usability and productivity issues identified by disabled students.

Notes:

Challenge Paper

AccessibleNews DAISY: Newspapers in DAISY

Gaurang Kanvinde; Saurabh Gupta

Accessible Systems, India

Reading newspapers and magazines becomes difficult and dreary task for people with visual impairment and print disabilities. As a result, this important avenue for increasing awareness and knowledge remains largely closed to such people. In this paper, we describe an elegant solution to this challenge - the AccessibleNews DAISY software developed by Accessible Systems, an Assistive Technology firm based in Mumbai, India

Notes:

Challenge Paper

Session 3: Accessing to Rich and Dynamic Content

Improving Accessibility to Mathematical Formulas: The Wikipedia Math Accessor

Leo Ferres; José Fuentes

University of Concepción, Chile

Mathematics accessibility is an important topic for inclusive education. We tackle the problem of accessing a large repository of mathematical formulas, by providing a natural language description of the more than 350,000 Wikipedia formulas using a well-researched sub-language targetting Spaniish speakers, for whom assistive technologies, particularly domain-specific technologies like the one described here, are scarce.

Notes: *Technical Paper*

Accessible QTI Presentation for Web-based E-Learning

Nathapong Luephattanasuk; Atiwong Suchato; Proadpran Punyabukkana

Chulalongkorn University, Thailand

Various guidelines for web accessibility have been issued to direct web developers to create web pages that deliver content to all. Although these guidelines cover most websites, there are some specific types of web pages that call for an extension of such guidelines. This research is dedicated to the improvement of accessibility of e-learning webs, particularly the examination portion. We chose IMS' Question and Test Interoperability specification (QTI) as a baseline framework, and extended it using Web Content Accessibility Guidelines (WCAG) to ensure that we could generate questions for exams that are accessible by all. Specifically, we proposed a method to interpret question structure from QTI specification using WCAG to help in presenting the interpreted questions in an accessible format. Finally, we developed a prototype interpreting tool to check whether the accessibility of the interpreted question is compatible with NVDA screen reader software. The performance of the tool at this stage is promising.

Notes:

Communication Paper

WAI-ARIA Live Regions and HTML5

Peter Thiessen

eBuddy B.V., The Netherlands

The W3C Web Accessibility Initiative - Accessible Rich Internet Applications (WAI-ARIA) and HTML5 are exciting and relatively new specifications with many new semantics that together help describe the complex desktop like behavior found in many Web applications. One aspect of ARIA, Live Regions, define markup that an Assistive Technology can use to understand how to treat a Document Object Model (DOM) update. Past work has been done showing live regions effectively expose DOM updates. However, little testing has been done on the combination of HTML5 elements with live region attributes. Test cases as well as the results of the test cases and vendor support are discussed in this paper.

Notes: *Communication Paper*

AJAX Time Machine

Andrew Brown; Simon Harper

University of Manchester, United Kingdom

Many modern Web pages update parts of their content, and this is often automatic. This allows a 'clean' user-interface and information-rich pages. Keeping up with updates or re- covering from mistakes can be a problem, however, as it is often not possible to revert a page to a previous state. This can be particularly problematic for users with poor literacy or cognitive disabilities, the elderly, or for users of assistive technologies. For pages that use these technologies to be truly accessible for all, they must afford users sufficient control over updates, to allow them to read and use the information available before it disappears forever. While applying good practice during page design and implementation can provide this, there are many pages for which information changes too rapidly for the user. We propose to supplement assistive technologies with a Web page 'time machine' that will allow users to review all the states a page has been in, and to step backwards or forwards through these states at their own pace.

Notes: *Communication Paper*

Session 4: Innovative Techniques and Studies

Accessibility Approach to Adopting New Technologies

Neil King; Damien McCormack

Vision Australia, Australia

As new web-based technologies emerge the challenge to make them accessible to people with disabilities intensifies. This communication paper discusses the findings of an Australian assessment of the technical accessibility of the Portable Document Format (PDF), and the user experience by 23 people with a disability. The questions posed and answered by this research in relation to PDF are the same questions that are asked of any web technology, and the same challenges will apply. This paper puts forward a number of recommendations based on the research to enable governments to take an inclusive approach towards the adoption of web-based technologies in the future.

Notes: *Communication Paper*

An Educational Tool for Generating Inaccessible Page Examples Based on WCAG 2.0 Failures

Hend Al-Khalifa[1]; Atheer Al-Khalifa[2]

[1]Electronic and Computer Institute at King Abdulaziz City of Science and Technology, Saudi Arabia
[2]King Saud University, Saudi Arabia

One of the problems encountered while teaching web accessibility evaluation to undergraduate students is the lack of proper educational tools that support learning accessibility barriers modularly. This paper presents an online educational tool called Accessibility Example Generator (AEG), designed to assist instructors in the process of creating examples of inaccessible web pages that violate the accessibility guidelines of WCAG 2.0. The online tool supports generating the examples in a form which can be received and reviewed easily by undergraduate computing students. By using a sequence of tailored checks, the instructor can choose which failure or combination of failures the example should include. Utilizing such a tool while teaching web accessibility will enrich the learning and understanding of WCAG 2.0 guidelines through generating modular examples that will not overwhelm the student and at the same time will help spread the knowledge of accessibility through future developers.

Notes:

Communication Paper

Prediction of Web Page Accessibility Based on Structural and Textual Features

Sina Bahram; Debadeep Sen; Robert St. Amant

North Carolina State University, United States

In this paper we present an approach to assessing the accessibility of Web pages, based on machine learning techniques. We are interested in the question of whether there are structural and textual features of Web pages, independent of explicit accessibility concerns, that nevertheless influence their usability for people with vision impairment. We describe three datasets, each containing a set of features corresponding to Web pages that are "Accessible" or "Inaccessible". Three classifiers are used to predict the category of these Web pages. Preliminary results are promising; they suggest the possibility of automated classification of Web pages with respect to accessibility.

Notes: *Communication Paper*

Awards and Closing

Notes

Notes

Conference Supporter

The 12th International ACM SIGACCESS Conference on Computers and Accessibility

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Important Dates

March 4, 2011
Deadline for Requesting Mentors

May 6, 2011
Paper Submission

June 17, 2011
Notification of acceptance (papers)

July 1, 2011
Poster, demo, doctoral consortium and student research competition submission

July 27, 2011
Notifcation of acceptance (all other)

More Information:
www.sigaccess.org/assets11/

SIGACCESS

ASSETS 2011

24-26 October 2011
Dundee, Scotland

ASSETS is the premier forum for dissemination of research on assistive technologies addressing needs of people with vision, motor, hearing, and speech impairments; cognitive limitations, including learning disabilities; and issues of aging.

Technical contributions accepted for presentation will be published in the Conference Proceedings and will be made available world-wide through the ACM Digital Library. Select authors will be invited to submit extended versions to a special issue of the ACM Transactions on Accessible Computing (TACCESS).

Conference Supporter

Zakon group
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Zakon Group: The Zakon Group is a technology consultancy and solutions provider that brings together the right mix of technology, experience, knowledge, and innovation for clients ranging from small businesses to multinational organizations. Our projects are quite diverse and include: Design and integration of the highest WiFi network in the eastern United States; Rent-a-CTO management services to non-profit organizations; Hosting and management of 10M+ hits/month Web sites; Development of the OpenConf conference management system in use by conferences worldwide. We pride ourselves in delivering services and solutions that are not only customer-centric, on-time, reliable, creative, and effective, but also accessible.

Conference Sponsors

Google: Google develops innovative search technologies that connect millions of people around the world with information every day. Founded in 1998 by Stanford Ph.D. students Larry Page and Sergey Brin, Google today is a top web property in all major global markets. Google's targeted advertising program provides businesses of all sizes with measurable results, while enhancing the overall web experience for users. Google is headquartered in Silicon Valley with offices throughout the Americas, Europe, and Asia.

IBM: IBM Research is taking the lead in making information technology accessible to many people, including those with disabilities. Our early and often pioneering efforts led to a number of first-of-a-kind technology innovations that transformed the assistive technology landscape and provided people with disabilities unprecedented access to technology. Technologies such as wireless communications and speech recognition improve the ability to access information for those who have disabilities and are also increasingly in demand by today's society seeking convenience and ease of use. Envisioning the world where everyone can have equal access to the full benefits of a digital life and maximize their potential, regardless of age or ability, IBM Research is placing a strong focus on Web accessibility research today to enhance human ability through innovation.

Microsoft: Microsoft's mission is to enable people and businesses throughout the world to realise their full potential. Microsoft is committed to being a responsible industry partner by working with businesses, communities, and governments to help advance social and economic well-being and to enable people around the world to realise their full potential. Microsoft's commitment and responsibilities as a global corporate citizen are grounded in our company mission and values, manifested through our business practices and operations, and carried out by thousands of Microsoft employees and suppliers worldwide.

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ACM's Special Interest Group on Hypertext, Hypermedia and the Web: SIGWEB supports the multi-disciplinary field of hypertext and hypermedia, facilitating its application both on the World-Wide Web and also in independent, distributed and stand-alone environments. It provides a forum for the promotion, dissemination, and exchange of ideas concerning research and applications among scientists, systems designers and end-users.

Keynote Speakers

Manish Gupta (Director of IBM Research - India and Chief Technologist for IBM India/South Asia)

Manish Gupta leads a team developing breakthrough technologies underlying innovation in Services, Software and Systems, and is leading the IBM Research activities across the world in the Mobile Web area. Previously, he has held senior leadership positions at IBM Research - India, IBM India Systems and Technology Lab, and the T. J. Watson Research Center, where he led research on software for the IBM Blue Gene supercomputer. IBM was awarded the 2008 National Medal of Technology and Innovation for the invention of the Blue Gene supercomputer by US President Barack Obama in October 2009. Manish received a B.Tech. in Computer Science from IIT Delhi in 1987 and a Ph.D. from the University of Illinois at Urbana-Champaign in 1992. He has co-authored over 70 papers, with more than 3000 citations, in the areas of high performance compilers, parallel computing, and Java Virtual Machine optimizations, and has filed eighteen patents. Manish has received two Outstanding Technical Achievement Awards, an Outstanding Innovation Award and the Lou Gerstner Team Award for Client Excellence at IBM, and has been invited to give keynotes at several international conferences and workshops. He is an ACM Distinguished Scientist and a member of the IBM Academy of Technology.

Bebo White (SLAC National Accelerator Laboratory)

Bebo White is a Departmental Associate (Emeritus) at the SLAC National Accelerator Laboratory, the U.S. national laboratory for high-energy physics and basic energy science at Stanford University. Working as a computational physicist, he first became involved with the emerging Web technology while on sabbatical at CERN in 1989.

Upon his return he was part of the team that established the first American Web site at SLAC (the fifth site in the world). Ever since, his academic research interests have evolved in parallel with Web technology.

In addition to his work at SLAC, he also holds faculty appointments at several other institutions, is involved with a number of major conferences series, and is a frequent conference speaker. He is the author (or co-author) of nine books, and over 100 papers and journal articles. His current research interests are Web Science, Social Media in Education, and Cloud Computing. However, given the opportunity, he will talk mercilessly about high-energy physics, jug band music and wine.

Conference Organisation

Chairs:

General Chair - Leo Ferres (Universidad de Concepción, Chile).
Programme Chairs - Markel Vigo (University of Manchester, UK) and Julio Abascal (University of the Basque Country, Spain).
Challenge Chairs - Rui Lopes (University of Lisbon, Portugal) and Paola Salomoni (University of Bologna, Italy).
Special Issue Chair - Leo Ferres (Universidad de Concepción, Chile).
Google Student Award Chairs - Jeffrey P. Bigham (University of Rochester, USA) and Yevgen Borodin (Stony Brook University, USA).

Programme Committee:

Shadi Abou-Zahra, W3C, France.
Margherita Antona, ICS-FORTH, Greece.
Myriam Arrue, University of the Basque Country, Spain.
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Armando Barreto, Florida International University, USA.
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Eugene Borodin, Stony Brook University, USA.
Giorgio Brajnik, University of Udine, Italy.
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Greg Gay, Ontario College of Art and Design, Canada.
Becky Gibson, IBM Emerging Internet Technologies, USA.
Simon Harper, University of Manchester, UK.
Sarah Horton, Dartmouth College, USA.
Matt Huenerfauth, City University of New York, USA.
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Arun Kumar, IBM India, UK.
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Katherine McCoy, University of Delaware, USA.
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Paola Salomoni, University of Bologna, Italy.
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Annalu Waller, University of Dundee, UK.
Takayuki Watanabe, Tokyo Woman's Christian University, Japan.
Yeliz Yesilada, METU NCC & University of Manchester, UK.

Microsoft Accessibility Challenge Judges:

Shadi Abou-Zahra, W3C, France.
Giorgio Brajnik, University of Udine, Italy.
Greg Gay, Ontario College of Art & Design, Canada.
Mike Paciello, The Paciello Group, USA.
Cynthia Shelly, Microsoft, USA.

Google Student Award Judges:

Terri M. Hedgpeth, Arizona State University, USA.
Richard Ladner, University of Washington, USA.
Jeffrey P. Bigham, University of Rochester, USA.
Yevgen Borodin, Stony Brook University, USA.

Steering Committee:

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Simon Harper, University of Manchester, UK.
David Sloan, University of Dundee, UK.
Hironobu Takagi, IBM Research, Japan
Yeliz Yesilada, METU NCC & University of Manchester, UK.