

Pradipta Biswas

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Areas of Interest

Human Computer Interaction, Intelligent User Interfaces, Multimodal Interaction, Cognitive Psychology, Inclusive Design

Professional Chronology

- **2016:** Joined Indian Institute of Science as an Assistant Professor
- **2014:** Promoted Senior Research Associate at Cambridge University Engineering Department
- **2013:** Fellow at Wolfson College, joined BAES EvoHMI project
- **2012:** Vice-chairman at International Telecommunication Union (ITU), joined IUATC project, visiting faculty at IIT, Mandi
- **2011:** Research Associate in Trinity Hall, Member of British Computer Society, WG Coordinator at ITU
- **2010:** Joined EU GUIDE project as a Research Associate, Associate Fellow at Higher Education Academy and Royal Society of Medicine

PhD Students

- LRD Murthy, BTech (Formerly at Tata Elxsi)
- Gowdham Prabhakar (MDes, Indian Institute of Information Technology Design & Manufacturing, Kancheepuram)
- Somnath Arjun (MCA, WBuT)

All students are funded through Ministry of Human Resource and Development, Govt of India

Doctoral Committee Member

- Wing Commander Delhi Babu (CSIR NAL)

Education

1. **Ph. D.** (2006 – 2010) in Computer Science at the **University of Cambridge Computer Laboratory and Trinity College**.
Thesis Title: Inclusive User Modelling
2. **M. Tech.** (2004-2006) in Information Technology from **Indian Institute of Technology, Kharagpur, India** with a CGPA of 9.66/10 (Got 2nd rank in a class of 13 students)
Thesis Title: Design of Adaptable Interfaces for Motor Impaired Users
3. **B. Tech.** (2000-2004) in Information Technology from **University of Kalyani, India** with First Class honours (Got 1st rank in a class of 66 students)
Thesis Title: Remote Monitoring of Home Gadgets

Projects Involved

1. Gaze Controlled Applications for eInclusion of users with SSMI, **Microsoft Research** (Principal Investigator)
2. Cognitive and Auditory Rehabilitation for Elderly, **Department of BioTechnology (DBT, Govt of India)** (2018-2021) (Principal Investigator)
3. Next Generation Automotive Cockpit, **Faurecia Service Group, France** (Principal Investigator)
4. Faurecia Intelligent Design Support, **Faurecia Service Group, France** (Co-Principal Investigator)
5. IT4All, **DST SERB Early Career Fellowship**, Govt. of India (2017-2020) (Principal Investigator)
6. Reducing pilots' cognitive load by facilitating human machine interaction in military aviation environment by **Aeronautical Research and Development Board, MoD, India** (2017-2019) (Principal Investigator)
7. A Smart Manufacturing Test Bed for Biomedical Devices by **Robert Bosch Centre for Cyber Physical Systems** (2016-2019) (Co - Principal Investigator)
8. Evolutionary Human-Machine Interfaces (Evo-HMI) funded by the **British Aerospace Systems** (2013 - 2015) (Senior Research Associate)
9. MATSA project funded by **Jaguar Land Rover** (2015 – 2016) (Senior Research Associate)
10. India-UK Advanced Technology Centre of Excellence (IUATC), funded by **UK EPSRC** (2012 - 2015) (Senior Research Associate)
11. Gentle User Interfaces for Elderly (GUIDE), funded by the **European Commission** (2010-13) (Research Associate)

Research Contribution

- Invented ***Inclusive User Model*** that simulates perception, cognition and motor action and personalize electronic user interfaces for people with a wide range of physical and cognitive abilities.
- Designed and developed ***intelligent multimodal interaction techniques*** involving eye-gaze, head and hand movement of users.
- Contributed to a set of ***ITU-T reports promoting accessibility and usability*** of electronic user interfaces.

Professional Activities

1. **Fellow of Wolfson College, University of Cambridge**, member of Governing Body Council, Fellowship and Membership Committee and Captain of Wolfson College Cricket club
2. **Vice Chairman at International Telecommunication Union** (ITU-T, Telecom branch of UNO) Focus Group on Smart TV and **Working Group Coordinator** at ITU-T Focus Group on Audio Visual Media Accessibility
3. **Member of Advisory Board of EU Prosperity4All project**
4. **Associate Fellow at the Royal Society of Medicine**
5. **Post Doctoral Research Associate at Trinity Hall**
6. **Visiting Professor at Indian Institute of Technology, Mandi, India**
7. **Guest Lecturer at Indian Institute of Technology, Madras, India**

8. **Member of European Union Task Force** on Standardizing User Models
9. **Organizing Committee Member** of British Computer Society Conference on Digital Accessibility in Higher and Further Education
10. **Program Committee Member** of
 - a. International Conference on User Modelling, Adaptation and Personalization (**UMAP 2014, 2015, 2016**)
 - b. ACM International Conference on Intelligent User Interfaces (**IUI 2012, 2013, 2015**)
 - c. The 1st IEEE International Workshop on User Centered Design and Adaptive Systems (**UCDAS 2014**)
 - d. International Conference on Creative Content Technologies (**CONTENT 2009, 2010**)
11. **Reviewer** for
 - a. **U.S. Department of Education**, Office of Special Education and Rehabilitative Services
 - b. **Rapporteur** at UK ESRC (Economic & Social Research Council)
 - c. Artificial Intelligence in Engineering Design – Cambridge University Press
 - d. International Journal of Human Computer Studies
 - e. International Journal of Human Computer Interaction
 - f. IEEE Transaction on Speech Technology
 - g. Universal Access in the Information Society
 - h. IEEE Transaction on Biomedical Engineering
 - i. IEEE Transaction on Neural Systems and Rehabilitation Engineering
 - j. Journal of Assistive Technologies
 - k. ACM SIGCHI Conference on Human Factors In Computing Systems (**CHI**)
 - l. ACM Symposium on User Interface Software and Technology (**UIST**)
 - m. Cambridge Workshop on Universal Access and Assistive Technology (**CWUAAT 2010, 2012, 2014, 2016**)
 - n. International Conference on Multimodal Interfaces and Workshop on Machine Learning for Multi-modal Interaction (**ICMI-MLMI 09**)
 - o. British Computer Society Conference on Human-Computer Interaction (**HCI 09**)
 - p. ACM International Conference on Graphics Interaction (**GI 08**),
 - q. International Conference on Multimodal Interfaces (**ICMI 08**)
12. **Senior Treasurer** at the Cambridge University Revolver and Pistol Club (**CURPC**)
13. **Peer Supporter** at Trinity College during 2008-09 and **Publicity Officer** of Cambridge university Peer Supporter team after undergoing a course at the University of Cambridge Counselling Service.
14. **Technology Officer** at the Scholars' council of Gates Cambridge Trust during 2008-09.

Scholarships

- Scholarship from Eddington and Rouse Ball Research Fund of Trinity College, University of Cambridge.
- Gates Cambridge Scholarship 2006 from Gates Cambridge Trust.
- Overseas Research Studentship Award from Board of Graduate Studies of University of Cambridge.

- Teaching Assistantship in Indian Institute of Technology, Kharagpur for getting **7th rank in country** in Graduate Aptitude Test in Engineering (GATE 2004, the entrance examination for Post Graduate studies in Engineering in India).

Awards

- DST SERB Early Career Fellowship 2017
- Silhouettes Gold medal in Imperial Shooting Meeting 2017.
- Silhouettes Gold Medal, Scott and Advancing Man Silver Medals in Imperial Shooting Meeting 2015.
- Silhouettes Gold medal and Scott Silver medal in Imperial Shooting Meeting 2013.
- Scott Gold Medal, Silhouettes Silver medal and Advancing Man Bronze medals in Imperial Shooting Meeting 2012.
- Scott and Silhouettes Gold Medals and Granet Bronze Medal in Imperial Shooting Meeting 2011.
- McGivern Gold Medal, Scott and Silhouettes Silver Medals and Granet Bronze Medal in Imperial Shooting Meeting 2010.
- National Merit Certificate for securing 49th position in state in secondary level examination
- Hind Rattan Award 2013 from NRI Welfare Society of India

Teaching Experience

1. Instructing **Human Computer Interaction** in August Semester, Intelligent User Interface in January Semester and co-instructing **Methodology of Design Research** in January Semester at Indian Institute of Science.
2. Conducted 3-day course on **Multimodal Interaction at Honeywell**
3. **Visiting Professor, Indian Institute of Technology, Mandi**, teaching a course on Human Computer Interaction from 2012 to 2016.
4. **Guest lecturer at Indian Institute of Technology, Madras, India** on a course on Assistive Technology
5. **Associate of the Higher Education Academy, UK**
6. **Supervisor at University of Cambridge** for
 - a. iTeam on Inclusive User modelling, iTeam is a multi-disciplinary team of students with industry mentors and real University inventions to assess the commercial viability of new technologies and product designs.
 - b. Engineering Tripos Part II project entitled “Improving eye tracking for controlling secondary functions in automotive and aviation environment”.
 - c. Computer Science and Technology Tripos Part II project entitled “Mouse target prediction middleware”.
 - d. Computer Science and Technology Tripos Part II project entitled “Graphical modification for partially sighted gamer accessibility”.
 - e. Computer Science and Technology Tripos Part II course on Human Computer Interaction.
 - f. Computer Science and Technology Tripos Part II course on Information Retrieval.
 - g. Computer Science and Technology Tripos Part IB course on Artificial Intelligence.
 - h. Computer Science and Technology Tripos Part IB course on Computer Graphics.
 - i. Computer Science and Technology Tripos Part IA course on Software Engineering.

7. **Teaching Assistant** at System Design Laboratory and Information System Design courses in Autumn Semester 2005 and Human Computer Interaction course in Spring Semester 2006 at School of Information Technology, Indian Institute of Technology, Kharagpur.

Talks

- Pradipta Biswas, ITU Workshop on TV and content delivery on Integrated Broadband Cable Networks Intelligent Inclusive TV, May 2017
- Intelligent Inclusive Interaction Design, University of Cambridge Computer Laboratory, March 2017
- Intelligent Inclusive Interaction Design, IISc Computer Science and Automaton, February 2017
- An Interdisciplinary Chronicle of Interaction Design, Indian Institute of Engineering Science and Technology, Shibpur, December 2016
- Eyeing your vision, OxBridge Preparation Program, Peterhouse and Jesus College, University of Cambridge, July 2015
- Experiment Design and Statistical Data Analysis, Wolfson College Bio-Engineering Society, May 2015
- The Scholar Speaks, Interview at Cam FM, December 2014
- Inclusive User Modelling and Multimodal Adaptation, Delhi Technical University, November 2014
- Inclusive Human Computer Interaction - from Indian farmers to Eurofighter Typhoon pilots, Wolfson College Science Society talks, Cambridge, May 2014
- Eye-Gazer, IIT Bombay TechFest, Mumbai, India, January 2014
- Inclusive User Modelling and Multimodal Adaptation, Technical University, Berlin, December 2013
- Inclusive User modelling and Applications, IEEE SPS talk at Indian Institute of Science, Bangalore, June 2013
- Inclusive User modelling and Applications, University of Ulster, UK, May 2013
- Personalization and accessibility through user modelling, Rogers, Canada, September 2012
- Virtual User Modelling and Simulation, ISO SC36 meeting at Shanghai, China, September 2011
- A framework to provide multimodal adaptable interfaces for Disabled and Elderly, British Telecom, UK, August 2011
- Rapid Aiming Movements, Trinity Hall, University of Cambridge, May 2011
- Inclusive User Modelling, Durham University, UK, January 2011
- A brief survey on user modelling in HCI, Indian Institute of Information Technology, Allahabad, India, January 2010
- Inclusive User Modelling, Imperial College London, November, 2009
- Inclusive User Modelling, Cavendish Laboratory, University of Cambridge Department of Physics, October, 2009
- Choosing Career in Academics, St. Thomas' College of Engineering and Technology, Kolkata, India. February, 2009

Job Offers

- Senior Engineer, Convergence System Team, DMC R&D Center, **Samsung Electronics** (2016)
- Application Programmer, **IBM Global Services India Pvt Ltd** (2006)

PhD Admission Offers

- Department of Information Science, **University of Pittsburgh**, USA (Fall 2006)
- School of Informatics, Centre for Human Computer Interaction Design, City University of London, UK (2006)

Full Publication List

Books

1. P. Biswas, **Using Eye Gaze Controlled Interfaces in Automotive Environments**, Springer, 2016 [*Downloaded 1040 times after first year of publication*]
2. P. Biswas, C. Duarte, P. Langdon and L. Almeida (Editors), **A Multimodal End-2-End Approach to Accessible Computing** (2nd Edition), Springer, ISBN 978-1-4471-6707-5, July 2015 [*Downloaded 926 times after first 4 months of publication*]
3. P. Biswas, **Inclusive Human Machine Interaction for India**, Springer, ISBN 978-3-319-06165-8, July 2014 [*Sold 31 copies and downloaded 581 times after first 16 months of publication*]
4. P. Biswas, C. Duarte, P. Langdon, L. Almeida and C. Jung (Editors), **A Multimodal End-2-End Approach to Accessible Computing**, Springer, ISBN 978-1-4471-5081-7, July 2013 [*Sold 45 copies and downloaded 2576 times after first 28 months of publication*]
5. P. Biswas, **Inclusive User Modelling: A Simulator to design Accessible User Interfaces**, VDM Verlag, ISBN: 978-3639296051

Patents Filed

1. G. Prabhakar and P. Biswas, Wearable Laser Pointer for Automotive User Interface, Application No.: 201741035044
2. P. Biswas, Interactive Gaze Controlled Projected Display, Application No.: 201641037828
3. P. Biswas and A. Jhunhunwala, User perception-based prediction of graphical user interface, Ref no.: 2023/CHE/2014
4. P. Biswas and A. Jhunhunwala, Prediction of modality of interaction with an electronic device based on user impairment, Ref. No.: 2024/CHE/2014

Book Chapters

1. P. Biswas and P. O. Looms, **From disability to capability: strategies for reconciling solutions for all**, Encyclopaedia of Computer Science and Technology (2nd Edition), Taylor and Francis
2. P. Biswas and P. Langdon, **Applications of Intelligent and Multimodal Eye Gaze Controlled Interfaces**, Wiley Handbook of Human-Computer Interaction

3. P. Biswas and M. Springett, **Inclusive User Modelling**, Wiley Handbook of Human-Computer Interaction
4. P. Biswas and P. Langdon, An HCI Survey on elderly users of India, *Inclusive Designing - Joining Usability, Accessibility, and Inclusion*, Springer 2014
5. P. Biswas, P. Langdon, J. Umadikar, S. Kittusami and S. Prashant, How interface adaptation for physical impairment can help able bodied users in situational impairment, *Inclusive Designing - Joining Usability, Accessibility, and Inclusion*, Springer 2014
6. P. Biswas and P. Langdon, Inclusive user modelling and simulation, *Advances in Therapeutic Engineering 2012*, CRC press, pp 283- 306
7. P. Langdon and P. Biswas, Clustering User Data for User Modelling in the GUIDE Multimodal Set-top Box, *Designing Inclusive Systems*, Springer-Verlag 2012
8. P. Biswas, A brief survey on user modelling in HCI, *Intelligent Techniques for Speech, Image and Language Processing 2012*, IGI press
9. P. Biswas and P. Robinson, Evaluating the cluster scanning system, *Designing Inclusive Interactions*, Springer-Verlag 2010, pp. 113-122
10. P. Biswas and P. Robinson, The effects of hand strength on pointing performance, *Designing Inclusive Interactions*, Springer-Verlag 2010, pp. 3-12
11. P. Biswas and P. Robinson, A Case Study of Simulating HCI for Special Needs, *Designing Inclusive Futures*, Springer-Verlag, 2008, pp. 175-184, ISBN 978-1-84800-210-4
12. P. Biswas and P. Langdon, Inclusive user modeling, *A Multimodal End-2-End Approach to Accessible Computing*, Springer
13. P. Biswas, R. Joshi, S. Chattopadhyay, U. R. Acharya and T. Lim, Interaction techniques for users with severe motor-impairment, *A Multimodal End-2-End Approach to Accessible Computing*, Springer
14. P. Biswas, N. Kaklanis, Y. Mohamad, M. Peissner, P. Langdon, D. Tzovaras and C. Jung, An Interoperable and Inclusive User Modeling concept for Simulation and Adaptation, *A Multimodal End-2-End Approach to Accessible Computing*, Springer

Reports

Main editor, reviewed and approved by European Commission

1. GUIDE D5.2 User Modelling and Simulation Tool
2. GUIDE D7.3 Final User Model

Contributor

1. ITU- T (Telecom Branch of UNO) Technical Report of the Focus Group on Smart Cable Television
2. ITU-T Technical Reports of the Focus Group on Audio Visual Media Accessibility
 - a. Participation and Digital Media
 - b. Participation Taxonomy
 - c. Vocabulary of Audio Visual Media Accessibility
3. Report of the EU task force on Standardization of user models - VUMS White paper
4. The annual Department of Health report on Research and Development in assistive technology 2013

Journal Papers

2018

1. G. Prabhakar and P. Biswas, Eye Gaze Controlled Projected Display in Automotive and Military Aviation Environments. **Multimodal Technologies and Interaction**, 2(1)
2. P. Biswas and G. Prabhakar, Detecting Drivers' Cognitive Load from Saccadic Intrusion, **Transportation Research Part F: Traffic Psychology and Behaviour** 54

2017

1. P. Biswas and Jeevithashree DV, Analysing ocular parameters of users with cerebral palsy for developing gaze controlled interface, **EC Ophthalmology** 8(5)

2016

1. N. Blow and P. Biswas, A pointing facilitation system for motor-impaired users combining polynomial smoothing and time weighted gradient target prediction models, **Assistive Technology** 29 (1), ISSN: 1040-0435, Taylors and Francis, 2016
2. P. Biswas, V. Dutt and P. Langdon, Comparing Ocular Parameters for Cognitive Load Measurement in Eye-gaze Controlled Interfaces, **International Journal of Human-Computer Interaction** 32(1), Taylor & Francis, Print ISSN: 1044-7318
3. Kaklanis N., Biswas P., Mohamad Y., Gonzalez M. F., Peissner M., Langdon P., Tzovaras D. and Jung C., Towards Standardization of User Models for Simulation and Adaptation Purposes, **Universal Access in the Information Society (UAIS)** 15(1)

2015

1. P. Biswas, and P. Langdon, Multimodal Intelligent Eye-Gaze Tracking System, **International Journal of Human-Computer Interaction** 31 (4), Taylor & Francis, Print ISSN: 1044-7318

2013

1. P. Biswas, G. A. Aydemir and P. Langdon, Developing and Validating a hearing impairment simulator, **Journal of Assistive Technologies** 7(3), ISSN: 1754-9450

2012

1. P. Biswas, P. Robinson and P. Langdon, Designing inclusive interfaces through user modelling and simulation, **International Journal of Human-Computer Interaction** 28(1), Taylor & Francis, Print ISSN: 1044-7318
2. P. Biswas, and P. Langdon, Developing multimodal adaptation algorithm for mobility impaired users by evaluating their hand strength, **International Journal of Human-Computer Interaction** 28(9), Taylor & Francis, Print ISSN: 1044-7318
3. P. Biswas and P. Robinson, Evaluating Interface Layout for Visually and Mobility Impaired Users through Simulation, **Universal Access in the Information Society (UAIS)**, Special Issue on Innovation for Inclusive Digital Television 12(1)
4. P. Biswas and P. Robinson, The Cluster Scanning System, **Universal Access in the Information Society (UAIS)**, Special Issue on Designing Inclusive Interaction 12(3)
5. P. Biswas et al., An inclusive approach to develop Web TV applications, **Journal of Assistive Technologies** 6(3), ISSN: 1754-9450

6. J. Coelho, P. Biswas, C. Duarte, T. Guerreiro, P. Feiteira, D. Costa, D. Costa, B. Neves, F. Alves and P. Langdon, Involving All Stakeholders in the Development of TV Applications for Elderly, *International Journal on Advances in Intelligent Systems*, 5(3), 2012, pp 427-440

2011

1. P. Biswas and P. Langdon, Investigating the gravity well algorithm to help in pointing in electronic interfaces by motor-impaired users, *Journal of Assistive Technologies*, 5(3) September 2011, ISSN: 1754-9450
2. P. Biswas and P. Langdon, A new input system for disabled users involving eye gaze tracker and scanning interface, *Journal of Assistive Technologies*, 5(2) June 2011, ISSN: 1754-9450

2008

1. P. Biswas and P. Robinson, A New Screen Scanning System based on Clustering Screen Objects, *Journal of Assistive Technologies*, 2(3) September 2008, pp. 24-31, ISSN: 1754-9450
2. P. Biswas and D. Samanta, Friend: A Communication Aid for Persons with Disabilities, *IEEE Transactions on Neural Systems & Rehabilitation Engineering*, Vol. 16, No. 2, April 2008, pp. 205-209
3. P. Biswas and S.K. Ghosh, A Novel Approach To Define Performance Metrics For Students' And Teachers' Evaluation, *Electronic Journal of E-Learning*, Vol. 5, Issue 2, pp. 87-102, ISSN 1479-4403

2007

1. P. Biswas, Simulating HCI for Special Needs, *ACM SIGACCESS Newsletter*, Issue 89, Sept 2007, pp 7-10

Conference Papers

2018

1. Jeevithashree DV, K. P. Saluja and P. Biswas, Gaze Controlled Interface For Limited Mobility Environment, ACM International Conference on **Designing Interactive Systems (DIS)** 2018
2. P. Biswas and Jeevithashree DV, Eye Gaze Controlled MFD for Military Aviation, ACM International Conference on **Intelligent User Interfaces (IUI)** 2018 (Acceptance rate 23%)

2017

1. A. Sahay and P. Biswas, Webcam based eye gaze tracking using a landmark detector, **ACM Compute 2017**, Annual Conference of ACM India
2. G. Prabhakar and P. Biswas, Interaction Design and Distraction Detection in Automotive UI, ACM Automotive UI Doctoral Consortium (**ACM AutomotiveUI 2017**)
3. P. Biswas, G. Prabhakar, J. Rajesh, K. Pandit and A. Halder, Improving Eye Gaze Controlled Car Dashboard using Simulated Annealing, Proceedings of the 31st British Human Computer Interaction Conference (**British HCI 17**)

4. P. Biswas, S. Twist and S. Godsill, Intelligent Finger Movement Controlled Interface for Automotive Environment, Proceedings of the 31st British Human Computer Interaction Conference 2017 (**British HCI 17**)
5. P. Biswas, S. Roy, G. Prabhakar, J. Rajesh, S. Arjun, M. Arora, B. Gurumoorthy and A. Chakrabarti, Interactive Sensor Visualization for Smart Manufacturing System, Proceedings of the 31st British Human Computer Interaction Conference 2017 (**British HCI 17**)
6. G. Prabhakar and P. Biswas, Evaluation of Laser Pointer as a Pointing Device in Automotive, IEEE International Conference on Intelligent Computing, Instrumentation and Control Technologies [**Best Paper Award**]
7. J. Rajesh and P. Biswas, Eye-gaze tracker as input modality for Military Aviation Environment, IEEE International Conference on Intelligent Computing, Instrumentation and Control Technologies
8. P. Biswas, A. Halder, K. Maheswary and S. Arjun, Inclusive Personalization of User Interfaces, 6th International Conference on Research into Design (**ICoRD 2017**)

2016

1. P. Biswas, Multimodal Gaze Controlled Dashboard, **ACM AutomotiveUI 2016**
2. G. Tyson, J. Bigham, E. L. Bodanese, N. Akhtar, P. Biswas, P. Langdon, V. Mimrot, P. Mukhopadhyay and V. Ribeiro, Designing an Adaptive Emergency Warning System for Heterogeneous Environments, IEEE 27th International Symposium on Personal, Indoor and Mobile Radio Communications -(PIMRC): Services Applications and Business (**IEEE PIMRC 2016 SAB**)
3. G. Prabhakar, J. Rajesh and P. Biswas, Comparison of three Hand Movement Tracking Sensors as Cursor Controllers, IEEE International Conference on Control, Instrumentation, Communication & Computational Technologies (ICCICCT-2016) [**Best Paper Award**]
4. K. Maheswary, S. Arjun and P. Biswas, Inclusive Crowd Sourcing based Disaster Reporting System, International Conference on Control, IEEE Instrumentation, Communication & Computational Technologies (ICCICCT-2016)

2015

1. P. Biswas and V. Dutt, Effect of road conditions on gaze-control interface in an automotive environment, Proceedings of HCI International 2015
2. P. Thomas, P. Biswas and P. Langdon, State-of-the-Art and Future Concepts for Interaction in Aircraft Cockpits, Proceedings of HCI International 2015

2014

1. P. Biswas and P. Langdon, User Interface Design for Developing Countries, **IEEE Coneect 2014** (Acceptance rate 19.6%)
2. P. Biswas and P. Langdon, Multimodal Target Prediction Model, **CHI 2014** Extended Abstract
3. P. Biswas, S. Sarangi, J. Umadikar, S. Kar and P. Langdon, Interface Personalization through Inclusive User Modelling Web Service, **ACM INTERACCION** 15th International Conference on Human Computer Interaction 2014
4. P. Biswas, S. Sarangi, S. Kar and P. Langdon, Application of Inclusive User Modelling Web Service, **UMAP 2014** Posters and Demo Proceedings

5. P. Biswas, J. Umadikar, P. Langdon, A. Kashyap and S. Prashant, Exploiting Inclusive User Model for an electronic Agriculture system, Human Computer Interaction International (**HCII**) 2014
6. P. Biswas and P. Langdon, Multimodal Target Prediction for eye-gaze and head-movement tracker, Human Computer Interaction International (**HCII**) 2014
7. Sanat Sarangi, Pradipta Biswas, Patrick Langdon, Subrat Kar, Personalized Multimodal Geo-Visualization through Inclusive User Modelling, Human Computer Interaction International (**HCII**) 2014

2013

1. P. Biswas and P. Langdon, Inclusive User Modelling and Applications, W3C User Modelling for Accessibility (**UM4A**) Online Symposium
2. P. Biswas and P. Langdon, Validating User Modelling Web Service, W3C User Modelling for Accessibility (**UM4A**) Online Symposium
3. P. Biswas and P. Langdon, A New Interaction Technique Involving Eye Gaze Tracker and Scanning Systems, ACM Eye Tracking South Africa (**ETSA**) 2013
4. P. Biswas, C. Duarte, C. Jung, J. Coelho, T. Guerreiro and P. Langdon, An accessible, adaptive and multimodal digital TV framework and corresponding development tool, IEEE Science and Information Conference 2013
5. P. Biswas, G. A. Aydemir, P. Langdon and S. Godsill, Intent recognition using Neural Networks and Kalman Filters, Proceedings of Third International Workshop, HCI KDD at **SouthCHI** Conference, **Springer LNCS 7947**
6. P. Biswas and P. Langdon, A survey on technology exposure and range of abilities of elderly and disabled users in India, Proceedings of **Human Computer Interaction International (HCII)**, **Springer LNCS 8010**

2012

1. P. Biswas, P. Langdon, C. Duarte, C. Jung, P. Hamisu and L. Almeida, Developing Intelligent User Interfaces for e-Accessibility and e-Inclusion, ACM International Conference on **Intelligent User Interfaces (IUI)** 2012
2. Y. Mohamad, M. Dangelmaier, M. Peissner, P. Biswas and C. A. Velasco, Virtual User Models for Designing and Using of Inclusive Products, **Computers Helping People With Special Needs, Lecture Notes in Computer Science**, 2012, Volume 7382/2012, 284-287
3. C. Jung, P. Hamisu, Carlos Duarte, P. Biswas and L. Almeida, GUIDE: Personalisable Multimodal User modal User Interfaces for Web Applications on TV Interfaces, Proceedings of **NEM Summit** 2012
4. N. Kaklanis, Y. Mohamad, M. Peissner, P. Biswas, P. Langdon and D. Tzovaras, An interoperable and inclusive user modelling concept for simulation and adaptation, **International Conference on User Modeling (UMAP)** 2012
5. C. Jung, P. Hamisu, C. Duarte, L. Frid, L. Almeida, P. Biswas, Personalised Interactive TV: An open-source software framework for adaptive multi-modal user interfaces, in Proceedings of IBC (International Broadcasting Convention), 2012

2011

1. P. Biswas and P. Langdon, The effect of hand strength on pointing performance of users for different input devices, Proceedings of the **ACM SIGACCESS Conference in Accessibility (ASSETS)** 2011
2. J. Coelho, C. Duarte, P. Biswas and P. Langdon, Developing Accessible TV Applications, Proceedings of the **ACM SIGACCESS Conference in Accessibility (ASSETS)** 2011
3. P. Biswas, C. Duarte, J. Cohello and P. Langdon, Multimodal adaptation through simulation for digital TV interface, Proceedings of the **ACM EuroITV** 2011
4. Y. Mohamad, P. Biswas, P. Langdon, M. Peissner, M. Dangelmaier, C. Jung, P. Wolf and N. Kaklanis, Standardisation of user models for designing and using inclusive products, **Joint Virtual Reality Conference (JVRC)** 2011
5. C. Duarte, P. Langdon, C. Jung, J. Coelho, P. Biswas and P. Hamisu, GUIDE - Creating accessible TV applications, Proceeding of the **11th European Association for the Advancement of Assistive Technology in Europe (AAATE) conference**, 2011
6. P. Biswas and P. Langdon, Investigating the accessibility of program selection menus of a digital TV interface, Proceedings of **Human Computer Interaction International (HCII) 2011, LNCS 6764**
7. P. Biswas and P. Langdon, Standardizing user models, Proceedings of **Human Computer Interaction International (HCII) 2011, LNCS 6766**
8. P. Hamisu, G. Heinrich, C. Jung, V. Hahn, C. Duarte, P. Langdon and P. Biswas, Accessible UI Design and Multimodal Interaction through Hybrid TV Platforms: Towards a Virtual-user Centered Design Framework, Proceedings of **Human Computer Interaction International (HCII) 2011, LNCS 6766**
9. P. Biswas and P. Langdon, Towards an inclusive world - a simulation tool to design interactive electronic systems for elderly and disabled users, Proceedings of the annual global conference of Service research and Innovation Institute (SRII) 2011, **IEEE Xplore**

2010

1. P. Biswas and P. Robinson, Evaluating the design of inclusive interfaces by simulation, Proceedings of the ACM International Conference on **Intelligent User Interfaces (IUI) 2010**
2. P. Langdon, M F Gonzalez and P. Biswas, Designing studies for requirements and modelling of users for an accessible set-top box, Proceedings of the 8th International Conference on Disability, Virtual Reality and Assoc. Technologies

2009

1. P. Biswas and P. Robinson, Predicting pointing time from hand strength, Usability & HCI for e-Inclusion, 5th Symposium of the Austrian Computer Society (USAB 2009)
2. P. Biswas and S.K. Ghosh, e-Tutor - An Approach for Integrated e-Learning Solution, International Conference on Virtual Learning (ICVL 09)
3. P. Biswas and P. Robinson, Modelling Perception using Image Processing Algorithms, 23rd British Computer Society Conference on Human-Computer Interaction (HCI 09)

2008

1. P. Biswas and P. Robinson, Automatic Evaluation of Assistive Interfaces, Proceedings of the ACM International Conference on **Intelligent User Interfaces (IUI) 2008**, pp. 247-256

2. P. Biswas, Simulating HCI for all, Doctoral Consortium for ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2008), **CHI Extended Abstracts 2008**: pp. 2649-2652
3. P. Biswas and P. Robinson, Modelling user interfaces for special needs, Accessible Design in the Digital World (ADDW) 2008
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