

# Sayan Sarcar

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CONTACT INFORMATION	School of Computing & Digital Technology Birmingham City University Millenium Point, Curzon Street, Birmingham United Kingdom - B4 7XG	<a href="https://sayansarcar.github.io/">https://sayansarcar.github.io/</a> <a href="mailto:mailtosayan@gmail.com">mailtosayan@gmail.com</a> <a href="mailto:Sayan.Sarcar@bcu.ac.uk">Sayan.Sarcar@bcu.ac.uk</a>
RESEARCH INTERESTS	Human-computer interaction, accessibility and ageing, input and interaction techniques on smartphones, multimodal interfaces, computational optimization in design	
ACADEMIC APPOINTMENT	<b>Assistant Professor</b> School of Computing & Digital Technology, Birmingham City University	July '21 – Present
	<ul style="list-style-type: none"><li>• Teaching graduate and undergraduate students and interested in human-computer interaction and accessibility research areas.</li></ul>	
PREVIOUS ACADEMIC APPOINTMENTS	<b>Assistant Professor</b> Faculty of Library, Information & Media Science, University of Tsukuba	April '18 – June '21
	<ul style="list-style-type: none"><li>• Taught graduate and undergraduate students and pursued research in human-computer interaction and accessibility areas.</li></ul>	
	<b>Research Associate (Postdoctoral Researcher)</b> School of Information and Center for Human-Engaged Computing Kochi University of Technology	Feb '15 – Jan '18
	<ul style="list-style-type: none"><li>• Japan Science and Technology Agency, Japan-Finland research projects within “FY2014 Strategic International Collaborative Research Program (SICORP)”<ul style="list-style-type: none"><li>– Project Title: User Interface Design for the Ageing Population</li><li>– Principal Investigators: Prof. Xiangshi Ren, Kochi University of Technology and Prof. Antti Oulasvirta, Aalto University, Finland</li></ul></li></ul>	
BOOK CHAPTER	<b>Sayan Sarcar</b> (2020). Rethinking Design of Model-based Optimized Interfaces for Older Adults. Computational Intelligence Applications for Text and Sentiment Data Analysis. Dipankar Das, Jadavpur University, India (Ed). Springer series Springer Tracts in Nature-Inspired Computing (STNIC) (Accepted).	
JOURNAL PUBLICATIONS	Xiaoxuan Li, Kavous Salehzadeh Niksirat, Shanshan Chen, Dongdong Weng, <b>Sayan Sarcar</b> , and Xiangshi Ren. The Impact of a Multitasking-Based Virtual Reality Motion Video Game on the Cognitive and Physical Abilities of Older Adults. Sustainability 2020, MDPI, Vol. 12, No. 21, November 2020, 9106	
	Jussi P. P. Jokinen, Zhenxin Wang, <b>Sayan Sarcar</b> , Chaklam Silpasuw-anchai, and Xiangshi Ren. Adaptive Feature Guidance: Modelling Visual Search with Graphical Layouts. International Journal of Human-Computer Studies (IJHCS), Elsevier. Vol. 136, April 2020, 102376	
	<b>Sayan Sarcar</b> , Jussi P. P. Jokinen, Antti Oulasvirta, Zhenxin Wang, Chaklam Silpasuw-anchai, and Xiangshi Ren. Ability-Based Optimization of Touchscreen Interactions. IEEE Pervasive Computing (Special Issue on Accessibility), Vol. 17, No. 1, 2018	

Debasis Samanta, **Sayan Sarcar** and Soumalya Ghosh, An Approach to Design Virtual Keyboards for Text Composition in Indian Languages, *International Journal of Human-Computer Interaction (IJHCI)*, Taylor & Francis, Vol. 29, No. 9, 2013

Pradipta Kumar Saha, Debasis Samanta, **Sayan Sarcar** and Manoj Kumar Sharma, Analysis of Visual Search Features, *International Journal of Human Factors Modelling and Simulation*, Inderscience Publishers, Vol. 3, No. 1, 2012

CONFERENCE  
PUBLICATIONS

Pranjal Protim Borah, Keyur Sorathia, and **Sayan Sarcar**. 2021. User-defined Bend Gesture Completion Strategies for Discrete and Continuous Inputs. In *Proceedings of IFIP Conference on Human-Computer Interaction (INTERACT '21)*. pp. 192-202, Springer

Yang Li, **Sayan Sarcar**, Yilin Zheng, and Xiangshi Ren. 2021. Exploring Text Revision with Backspace and Caret in Virtual Reality. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21)*. pp: 1–12, ACM, New York, NY, USA

**Sayan Sarcar**. 2021. Design and Evaluation of Model-based Optimized Touchscreen Keyboards for Older Adults with Hand Tremor and Dyslexia. In *Proceedings of the 23<sup>rd</sup> International Conference on Human-Computer Interaction (HCI International 2021)*. Online, 24 - 29 July, 2021 (Accepted)

Masaaki Sadasue, Daichi Tagami, **Sayan Sarcar**, and Yoichi Ochiai. 2021. Blind-Badminton: A Working Prototype to Recognize Position of Flying Object for Visually Impaired Users. In *Proceedings of the 23<sup>rd</sup> International Conference on Human-Computer Interaction (HCI International 2021)*. Online, 24 - 29 July, 2021 (Accepted)

Kosaku Namikawa, Ippei Suzuki, Ryo Iijima, **Sayan Sarcar**, and Yoichi Ochiai. 2021. EmojiCam: Emoji-assisted video communication system leveraging facial expressions. In *Proceedings of the 23<sup>rd</sup> International Conference on Human-Computer Interaction (HCI International 2021)*. Online, 24 - 29 July, 2021 (Accepted)

Jun-Li Lu, Hiroyuki Osone, Akihisa Shitara, Ryo Iijima, Bektur Ryskeldiev, **Sayan Sarcar**, and Yoichi Ochiai. 2021. Personalized Navigation that Links Speaker's Ambiguous Descriptions to Indoor Objects for Low Vision People. In *Proceedings of the 23<sup>rd</sup> International Conference on Human-Computer Interaction (HCI International 2021)*. Online, 24 - 29 July, 2021 (Accepted)

**Sayan Sarcar**. 2020. Evaluation of Model-based Optimized Touchscreen Keyboard for Older Adults with Hand Tremor. *6<sup>th</sup> International ACM In-Cooperation HCI and UX Conference (CHIuXiD 2020)*, Jakarta, Indonesia (Accepted)

**Sayan Sarcar**. 2020. Usability Evaluation of Short Dwell-time Activated Eye Typing Techniques. In *Proceedings of the 22<sup>nd</sup> International Conference on Human-Computer Interaction (HCI International 2020)*. pp: 188-210, 19 - 24 July, 2020, Copenhagen, Denmark

Yang Li, **Sayan Sarcar**, Sunjun Kim, and Xiangshi Ren. 2020. Swap: A Replacement-based Text Revision Technique for Mobile Devices. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. ACM, New York, NY, USA, Article 90, 12 pages.

Korok Sengupta, Sabin Bhattarai, **Sayan Sarcar**, Scott MacKenzie, and Steffan Staab. 2020. Leveraging error correction in voice-based text entry by Talk-and-Gaze. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. ACM, New York, NY, USA, Article 452, 11 pages.

- Sayan Sarcar**. 2019. Ability-based Optimization: Design and Evaluation of Touchscreen Keyboards for Older Adults with Dyslexia. 31<sup>st</sup> Australian Conference on Human-Computer Interaction (OZCHI'19). pp: 472-475, 3 - 5 December, 2019, Perth, Australia
- William Delamare, Chaklam Silpasuwanchai, **Sayan Sarcar**, Toshiaki Shiraki, and Xiangshi Ren. 2019. On Gesture Combination: An Exploration of a Solution to Augment Gesture Interaction. 2019 ACM Conference on Interactive Surfaces and Spaces (ISS '19). ACM SIGCHI, pp: 135-146, 11 - 13 November, 2019, Daejeon, South Korea
- Jussi P. P. Jokinen, **Sayan Sarcar**, Antti Oulasvirta, Chaklam Silpasuwanchai, Zhenxin Wang, and Xiangshi Ren. 2017. Modelling Learning of New Keyboard Layouts. 35<sup>th</sup> ACM CHI Conference on Human Factors in Computing Systems, ACM SIGCHI, pp: 4203-4215, 6 - 11 May, 2017, Denver, USA (**Best Paper Award**)
- Manoj Kumar Sharma, **Sayan Sarcar**, Debdoot Sheet, and Prabir Kumar Biswas. 2016. Limitations with measuring performance of techniques for abnormality localization in surveillance video and how to overcome them?. 10<sup>th</sup> Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP '16). Article 75 , 8 pages. 18 - 22 December, 2016, Guwahati, India
- Qinglong Wang, Xiangshi Ren, **Sayan Sarcar**, and Xiaoying Sun. 2016. EV-Pen: Leveraging Electro-vibration Haptic Feedback in Pen Interaction. 2016 ACM Conference on Interactive Surfaces and Spaces (ISS '16). pp: 57-66, 6 - 8 November, 2016, Niagara Falls, Canada (**Best Paper Award**)
- Sayan Sarcar**, Jussi Jokinen, Antti Oulasvirta, Chaklam Silpasuwanchai, Zhenxin Wang, and Xiangshi Ren. 2016. Towards Ability-Based Optimization for Aging Users. International Symposium on Interactive Technology and Ageing Populations (ITAP '16). pp: 77-86, 20 - 22 October, 2016, Kochi, Japan
- Nem Khan Dim, Chaklam Silpasuwanchai, **Sayan Sarcar**, and Xiangshi Ren. 2016. Designing Mid-Air TV Gestures for Blind People Using User- and Choice-Based Elicitation Approaches. 2016 ACM Conference on Designing Interactive Systems (DIS '16). ACM SIGCHI, pp: 204 - 214, 4 - 8 June, 2016, Brisbane, Australia
- Tuhin Chakraborty, **Sayan Sarcar** and Debasis Samanta, Design and Evaluation of a Dwell-free Eye Typing Technique, 32<sup>nd</sup> ACM CHI Conference on Human Factors in Computing Systems, ACM SIGCHI, pp: 1573 - 1578, 26 April - 1 May, 2014
- Sayan Sarcar** and Prateek Panwar, Eyeboard++ : An Enhanced Eye Gaze-based Text Entry System in Hindi, 5<sup>th</sup> Indian Conference on Human Computer Interaction (India HCI), ACM, pp: 354 - 363, 24 - 27 September, 2013, Bangalore, India
- Manoj Kumar Sharma, Pradipta Kumar Saha, **Sayan Sarcar** and Debasis Samanta, Error Quantifying Metrics for Text Entry Systems Augmented with Word Prediction, 11<sup>th</sup> Asia Pacific Conference on Computer Human Interaction (APCHI), ACM SIGCHI, pp: 45 - 54, 24 - 27 September, 2013, Bangalore, India (**Best Student Paper Award**)
- Manoj Kumar Sharma, **Sayan Sarcar**, Pradipta Kumar Saha and Debasis Samanta, Visual clue: An Approach to Predict and Highlight Next Character, 4<sup>th</sup> International Conference on Intelligent Human Computer Interaction (IHCI), IEEE, pp: 1 - 7, 27-29 December, 2012, Kharagpur, India
- Debasis Samanta, Soumalya Ghosh, Somnath Dey, **Sayan Sarcar**, Manoj Kumar Sharma, Pradipta Kumar Saha and Santa Maiti, Development of Multimodal User

Interfaces to Internet for Common People, 4<sup>th</sup> International Conference on Intelligent Human Computer Interaction (IHCI), IEEE, pp: 1 - 8, 27-29 December, 2012, Kharagpur, India

Prateek Panwar, **Sayan Sarcar** and Debasis Samanta, EyeBoard: A Fast and Accurate Eye Gaze-based Text Entry System, 4<sup>th</sup> International Conference on Intelligent Human Computer Interaction (IHCI), IEEE, pp: 1 - 8, 27-29 December, 2012, Kharagpur, India

Manoj Kumar Sharma, Pradipta Kumar Saha, **Sayan Sarcar** and Debasis Samanta, Accessing Dynamic Webpages in Users Languages, Students' Technology Symposium (TechSym), IEEE, pp: 262 - 267, 14-16 January, 2011, Kharagpur, India

Soumalya Ghosh, **Sayan Sarcar** and Debasis Samanta, Designing an Efficient Virtual Keyboard for Text Composition in Bengali, 3<sup>rd</sup> International Conference on Human Computer Interaction (IndiaHCI), ACM, pp: 84 - 87, 3 - 4 July, 2011, Bangalore, India

Soumalya Ghosh, **Sayan Sarcar**, Manoj Kumar Sharma and Debasis Samanta, Effective Virtual Keyboard Design with Size and Space Adaptation, Students' Technology Symposium (TechSym), IEEE, pp: 262 - 267, 3-4 April, 2010, Kharagpur, India

**Sayan Sarcar**, Soumalya Ghosh, Pradipta Kumar Saha and Debasis Samanta, Virtual Keyboard Design: State of the Arts and Research Issues, Students' Technology Symposium (TechSym), IEEE, pp: 289 - 299, 3-4 April, 2010, Kharagpur, India

NON-REFEREED  
PUBLICATIONS

Ryo Iijima, Akihisa Shitara, **Sayan Sarcar**, and Yoichi Ochiai. 2021. Word Cloud for Meeting: A Visualization System for DHH People in Online Meetings. 23<sup>rd</sup> International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '21), ACM SIGCHI, Article No.: 99. 18 - 22 October, Online

Ryo Iijima, Akihisa Shitara, **Sayan Sarcar**, and Yoichi Ochiai. 2021. Smartphone Drum: Gesture-based Digital Musical Instruments Application for Deaf and Hard of Hearing People. ACM Spatial User Interaction Conference (SUI '21), ACM SIGCHI, 9 - 10 November, Online. (Accepted)

**Sayan Sarcar**, Cosmin Munteanu, Neil Charness, Jussi Jokinen, Xiangshi Ren, and Emma Nicol. 2021. Designing Interactions for the Ageing Populations - Addressing Global Challenges. 39<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '21), ACM SIGCHI, Article W37. 8 - 13 May, Online

Josh Tedjasaputra, Briane Paul V. Samson, Masitah Ghazali, Eunice Sari, **Sayan Sarcar**, Dilrukshi Gamage, Kazuyuki Fujita, Pranjal Jain, Amit Jena, Toni-Jan Keith Palma Monserrat, Nabila Sindi, Kaixing Zhao, Jordan Aiko Deja, Manvi Fotedar, Manjiri Joshi, Yang Li, Zhicong Lu, Akihiro Matsufuji, Shio Miyafuji, Korok Sengupta, Diksha Singh, Simran Singh, Umar Taufiqulhakim. 2021. Asian CHI Symposium: HCI Research from Asia and on Asian Contexts and Cultures. 39<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '21), ACM SIGCHI, Article Sym01. 8 - 13 May, Online

**Sayan Sarcar**. 2020. Design and Evaluation of Model-based Optimized Touchscreen Keyboard for Older Adults with Dyslexia. 19<sup>th</sup> Annual Pre-ICIS Workshop on HCI Research in Management Information Systems, SIGHCI, 12 December, Online

Kotaro Oomori, Akihisa Shitara, Tatsuya Minagawa, **Sayan Sarcar**, and Yoichi Ochiai. 2020. A Preliminary Study on Understanding Voice-only Online Meetings Using Emoji-based Captioning for Deaf or Hard of Hearing Users. 22<sup>nd</sup> International ACM

SIGACCESS Conference on Computers and Accessibility (ASSETS '20), October 26–28, 2020, Virtual Event, Greece. ACM, New York, NY, USA, 4 pages.

Clemens Schartmüller, **Sayan Sarcar**, Andreas Reiner, Andrew L. Kun, Orit Shaer, Linda Ng Boyle, and Shamsi Iqbal. 2020. Automated Cars as Living Rooms and Offices: Challenges and Opportunities. 38<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '20), ACM SIGCHI, Article SIG02. 25 - 30 April, Hawaii, USA

Anna Vasilchenko, Jie Li, Bektur Ryskeldiev, **Sayan Sarcar**, Yoichi Ochiai, Kai Kunze, and Iulian Radu. 2020. Collaborative Learning & Co-Creation in XR. 38<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '20), ACM SIGCHI, Article SIG04. 25 - 30 April, Hawaii, USA

Korok Sengupta, **Sayan Sarcar**, Alisha Pradhan, Roisin McNaney, Sergio Sayago, Debaleena Chattopadhyay, and Anirudha Joshi. 2020. Challenges and Opportunities of Leveraging Intelligent Conversational Assistant to Improve the Well-being of Older Adults. 38<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '20), ACM SIGCHI, Article SIG05. 25 - 30 April, Hawaii, USA

**Sayan Sarcar**, Cosmin Munteanu, Jussi Jokinen, Neil Charness, Mark Dunlop, Xiangshi Ren, and Jenny Waycott. 2020. Designing Interactions for the Ageing Populations - Addressing Global Challenges. 38<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '20), ACM SIGCHI, Article W21. 25 - 30 April, Hawaii, USA

**Sayan Sarcar**, Ayumu Ono, Chaklam Silpasuwanchai, Antti Oulasvirta, William Delamare, and Xiangshi Ren. 2019. Exploring Performance of Thumb Input for Pointing and Dragging Tasks in Mobile Devices. ACM Conference Extended Abstracts on Human Factors in Computing Systems (CHI '19), ACM SIGCHI, 4 - 9 May, Glasgow, UK

Chen Wang, **Sayan Sarcar**, Masaaki Kurosu, Jeffrey Bardzell, Antti Oulasvirta, Aliaksei Miniukovich, and Xiangshi Ren. 2018. Approaching Aesthetics on User Interface and Interaction Design. ACM Conference Extended Abstracts on Interactive Surfaces and Spaces (ISS '18), ACM SIGCHI, 25 - 28 November, Tokyo, Japan

Zack Wilson, Helen Yin, **Sayan Sarcar**, Rock Leung, and Joanna McGrenere. 2018. Help Kiosk: An Augmented Display System to Assist Older Adults to Learn How to Use Smart Phones. 20<sup>th</sup> ACM SIGACCESS Conference on Computers and Accessibility (Poster & Demo track), ACM SIGACCESS, 22 - 24 October, Galway, Ireland

Kavous Saxlehzhadeh Niksirat, **Sayan Sarcar**, Huatong Sun, Effie L-C Law, Torkil Clemmensen, Jeffrey Bardzell, Antti Oulasvirta, Chaklam Silpasuwanchai, Ann Light, and Xiangshi Ren. 2018. Approaching Engagement towards Human-Engaged Computing. 36<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '18), ACM SIGCHI, 21 - 26 April, Montreal, Canada

**Sayan Sarcar**, Cosmin Munteanu, Jussi Jokinen, Antti Oulasvirta, Neil Charness, Mark Dunlop, and Xiangshi Ren. 2018. Designing Interactions for the Ageing Populations. 36<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '18), ACM SIGCHI, 21 - 26 April, Montreal, Canada

**Sayan Sarcar**, Jussi Jokinen, Antti Oulasvirta, Xiangshi Ren, Chaklam Silpasuwanchai and Zhenxin Wang. 2017. Ability-based Optimization: Smartphone Text Entry Interface Design for Older Adults, 16<sup>th</sup> IFIP TC 13 International Conference (INTERACT), pp: 326-331, 25 - 29 September 2017, Mumbai, India

Jingxin Liu, **Sayan Sarcar**, Xiangshi Ren, Chaklam Silpasuwanchai and Zhenxin Wang, Exploring the Design Space of Smartphone Text Entry Interfaces for Elderly with Tremor, ACM Conference on Chinese CHI, June 2017, Guangzhou, China (**Best Poster Award**)

Chaklam Silpasuwanchai, Jussi P. P. Jokinen, **Sayan Sarcar**, Zhenxin Wang, Antti Oulasvirta and Xiangshi Ren, Exploring the Design Space of Text-Entry Interfaces for Aging Users, 35<sup>th</sup> ACM CHI Conference on Human Factors in Computing Systems, *Workshop on Designing Mobile Interactions for the Ageing Populations*, May 2017, Denver, USA

**Sayan Sarcar**, Cosmin Munteanu, Jussi P. P. Jokinen, Antti Oulasvirta, Chaklam Silpasuwanchai, Neil Charness, Mark Dunlop, and Xiangshi Ren. 2017. Designing Mobile Interactions for the Ageing Populations. 35<sup>th</sup> CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '17), ACM SIGCHI, pp: 506-509, 6 - 11 May, 2017, Denver, USA

Neil Charness, Mark Dunlop, Cosmin Munteanu, Emma Nicol, Antti Oulasvirta, Xiangshi Ren, **Sayan Sarcar**, and Chaklam Silpasuwanchai. 2016. Rethinking Mobile Interfaces for Older Adults. 34<sup>th</sup> CHI Conference on Human Factors in Computing Systems (SIG meeting). ACM SIGCHI, pp: 1131-1134, 7 - 12 May, 2016, San Jose, USA

**Sayan Sarcar**, Ahmed Sabbir Arif and Ali Mazalek, Metrics for Bengali Text Entry Research, 33<sup>th</sup> ACM CHI Conference on Human Factors in Computing Systems, *Workshop on Workshop on Text Entry on The Edge*, April 2015, Seoul, South Korea

**Sayan Sarcar** and Prateek Panwar, EyeK: An Efficient Dwell-Free Eye Gaze-Based Text Entry System, 11<sup>th</sup> Asia Pacific Conference on Computer Human Interaction (APCHI), ACM SIGCHI, pp: 215 - 220, 24 - 27 September, 2013, Bangalore, India (**Best Poster Award**)

Pawan Patidar, Himanshu Raghuvanshi and **Sayan Sarcar**, Quickpie: An interface for Fast and Accurate Eye Gaze based Text Entry, 5<sup>th</sup> Indian Conference on Human Computer Interaction (India HCI), ACM, 24 - 27 September, 2013, Bangalore, India

#### AWARDS AND TRAVEL GRANTS

- Travel Fellowship Award to attend ACM ASSETS 2017 at Baltimore, USA
- Best Poster Award, ACM Chinese CHI 2017
- Best Paper Award (top 1% among 2400 (approx.) submissions), ACM CHI 2017
- Best Paper Award (one among 119 submissions), ACM ISS 2016
- International Travel Support from SERB, Govt. of India, to attend ACM CHI 2014 at Toronto, Canada
- Best Oral presentation Award in Research Scholars' Day 2014
- Best Student Paper and Poster Award, APCHI 2013
- Best Oral presentation Award in Research Scholars' Day 2013
- Best Poster presentation Award in Research Scholars' Day 2012

#### ADVISING AND MENTORING

Kousuke Kume, Masters. (June 2015 - March 2016) Exploring Performance of One Thumb Input using Pointing and Swiping Tasks

Hiroki Moriyama, Undergraduate. (June 2015 - March 2017) Exploring Visual Representations of Error Rates in Tapping and Swiping Tasks on Touchscreens.

Ayumu Ono, Undergraduate. (June 2016 - March 2018) Leveraging Accelerometer

and Gyroscope Sensor Data to Predict Screen Touch.

Yutaro Matsuura, Undergraduate. (Jan - Dec 2019) Exploring Thumb Input Performance for Pointing and Dragging Tasks on Smartphone

Okamura Masaki, Undergraduate. (Jan - Dec 2021) Understanding Japanese Older adults with Mild Cognitive Impairments

Mizonobe Yukino, Undergraduate. (Jan - Dec 2021) Leveraging Smell as a Stimulus to Improve Memory Recalling Ability of Human

Matthew Porter, Undergraduate. (Oct 2021 - Sep 2022) Interactive Learning & Engagement Through Augmented Reality in a Business

CONFERENCE  
SERVICE AND  
REVIEWING

- Associate Chair for Papers track, ACM Conference on Human Factors in Computing Systems (ACM CHI 2022), New Orleans, LA, USA.
- Associate Chair of ACM CHI Play 2021 Conference Full paper track, Vienna, Austria.
- Associate Chair of ACM International Conference on Interactive Media Experience 2021 Full paper track, Online.
- Associate Chair of Designing Interactive Systems 2021 Conference Full paper and Pictorial track, Online.
- Diversity & Inclusion Co-Chair, ACM International Conference on Mobile Human-Computer Interaction (MobileHCI 2022), Vancouver, Canada.
- Co-Editor of The Gerontechnology Journal Special Issue Entitled “Designing Interactions for the Ageing Populations”, 2021.
- Associate Chair of INTERACT 2021 Conference Full paper track, Bari, Italy.
- Diversity & Inclusion Co-Chair, 23<sup>rd</sup> International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2021), Online.
- Reviewing Chair, Asian CHI Symposium - co-locating event with ACM Conference on Human Factors in Computing Systems (ACM CHI 2021), Yokohama, Japan.
- Associate Chair for Papers and Late Breaking Work tracks, ACM Conference on Human Factors in Computing Systems (ACM CHI 2021), Yokohama, Japan.
- Program Committee Member, Full and Short Papers, 3<sup>rd</sup> International Conference on Artificial Intelligence & Virtual Reality (AIVR 2021), Virtual event
- Associate Editor of International Journal of Computers and Applications, Taylor & Francis (2019 - 2020)
- Associate Chair for both Full Paper and Late Breaking Work tracks, ACM Conference on Human Factors in Computing Systems (ACM CHI 2020), Hawaii, USA.
- Paper Co-Chair, 11<sup>th</sup> International Conference on Human-Computer Interaction (IndiaHCI 2020), India
- Publicity Co-Chair and Program Committee member, 22<sup>nd</sup> International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2020), Online.
- Organizer of a Workshop on “Designing Interactions for the Ageing Populations - Addressing Global Challenges” in ACM CHI 2020 Conference on Human Factors in Computing Systems, Hawaii, USA.
- Associate Chair of ACM ISS 2019 Conference Full paper track, Daejeon, South Korea.
- Associate Chair of INTERACT 2019 Conference Full paper track, Paphos, Cyprus.
- Associate Chair of ACM CHI 2019 Conference Late Breaking Work paper track, Glasgow, Scotland.

- Organizer of a Workshop on “Approaching Aesthetics on User Interface and Interaction Design” in ACM ISS Conference on Interactive Surfaces & Spaces, Tokyo, Japan, 2018
- Organizer of a Workshop on “Forming SIGCHI Student and Professional Chapters in India” in ACM India HCI 2018 Conference, Bengaluru, India, 2018
- General Co-chair of International Symposium on IxAP & IDHF, Qingdao, China, 2018
- Chair of a session on “Touch, Pen and Mice” in ACM CHI Conference on Human Factors in Computing Systems, Montreal, Canada, 2018
- Organizer of a Workshop on “Designing Interactions for the Ageing Populations” in ACM CHI Conference on Human Factors in Computing Systems, Montreal, Canada, 2018
- Organizer of an International Workshop on “Human-Engaged Computing” at Kochi University of Technology, Kochi, Japan, 2017
- Chair of a session on “Persuasive Technology and Rehabilitation” in 16<sup>th</sup> IFIP TC 13 International Conference (INTERACT), Mumbai, India, 2017
- Organizer of a Workshop on “Designing Mobile Interactions for the Ageing Populations” in ACM CHI Conference on Human Factors in Computing Systems, Denver, USA, 2017
- General Co-chair of International Symposium on Interactive Technology and Ageing Populations (ITAP '16), Kochi, Japan, 2016
- Organizer of a SIG meeting entitled “Rethinking Mobile Interfaces for Older Adults” in ACM CHI Conference on Human Factors in Computing Systems, San Jose, USA, 2016
- Student Volunteer in ACM CHI 2015, Seoul, South Korea
- Publication Co-chair of IEEE Students’ Technology Symposium (TechSym), Kharagpur, India, 2014
- Publication Chair of IEEE Students’ Technology Symposium (TechSym), Kharagpur, India, January 14–16, 2011
- Reviewer for ACM Transactions on Computer-Human Interaction, ACM Transactions on Accessible Computing, ACM Transactions on the Web, Elsevier International Journal of Human-Computer Studies, IEEE Transactions on Man-Machine Systems, IEEE Transactions on Computational Social Systems, Journal of the Royal Society Interface, Behaviour & Information Technology, ACM CHI 2013-2015, 2017-2020, UIST 2018-2020, ACM IUI 2016, 2018, 2019, MobileHCI 2017-2019, ACM DIS 2014, 2016-2018, 2020, ACM CHI PLAY 2020, BCS-HCI 2014-2016, NordiCHI 2014, 2016-2018, 2020, ACM TVX 2016-2017, INTERACT 2017, 2019, ACM ITAP 2016, ACM IndiaHCI 2013-2016, ACM OZCHI 2015-2017, IEEE AIVR 2018-2020

PRESENTATION  
AND TALK

- Delivered an online speech on “Overview of HCI Research” at the ACM SIGCHI Summer School on Research Methodologies: CHI and CSCW organized by ACM SIGCHI Dhaka chapter (June 2020)
- Delivered an invited class lecture on “On Gesture Combination: An Exploration of a Solution to Augment Gesture Interaction” at the Undergraduate Human-Computer Interaction course (January 2020) at Kochi University of Technology, Kochi, Japan
- Delivered a talk on “Designing Interfaces for the Aging Populations: Experience and Lessons Learned” at International Workshop on Human-Engaged Computing (IWHEC 2019), Kochi, Japan
- Organized and presented a One-day Workshop at ACM ISS Conference, Tokyo, Japan, November 2018
- Delivered a talk on ‘Ability based Optimization: A Case Study on Designing Touchscreen Interfaces for Older Adults’ at the University of Leicester, UK, October 2018



- Delivered a talk on ‘Ability based Optimization: A Case Study on Designing Touchscreen Keyboard Interfaces for Older Adults’ at the University of Texas at San Antonio, USA, April 2018
- Delivered a talk on ‘Designing Smartphone Text Entry Interface for Older Adults’ at Indian Institute of Technology Hyderabad, India, March 2018
- Delivered a talk on ‘Designing Interactions for the Ageing Populations’ at Waseda University, Japan, January 2018
- Delivered a talk on ‘Model-based Optimization and its Application to Design Smartphone UIs’ at the University of Tsukuba, Japan, December 2017
- Organized and presented in the One-day Workshop at ACM CHI Conference on Human Factors in Computing Systems, Montreal, Canada, April 2018
- Organized and presented in the SIG Meeting at ACM CHI Conference on Human Factors in Computing Systems, Denver, USA, May 2016
- Delivered a talk on ‘User Interface Design for the Ageing Populations’ at Kochi University of Technology, Japan, June 2015
- Presented workshop paper in ACM CHI Conference on Human Factors in Computing Systems, Seoul, South Korea, April 2015
- Presented poster in ACM CHI Conference on Human Factors in Computing Systems, Toronto, Canada, April 2014
- Presented poster in Indian Conference on Human Computer Interaction (India HCI), Bangalore, India, September 2013
- Presented poster in Asia Pacific Conference on Computer Human Interaction, Bangalore, India, September 2013
- Presented poster in Research Scholars’ Day of School of Information Technology, January 2013
- Presented paper in Intelligent Human Computer Interaction (IHCI) Conference, IIT Kharagpur, India, December 2012
- Presented paper in IEEE Student Technology Symposium (TechSym), IIT Kharagpur, India, January 2011
- Presented paper in IEEE Student Technology Symposium (TechSym), IIT Kharagpur, India, April 2010
- Delivered talk on “Multimodal User Interface for Common People in India” in workshop on “Natural Interface Design”, IIT Kharagpur, India, June 2009

#### PROFESSIONAL AFFILIATIONS

- ACM and SIGCHI professional member
- Member, Japan ACM SIGCHI Chapter
- Member, HCI Professional Association of India

#### TEACHING EXPERIENCE

##### **University of Tsukuba, Japan**

Assistant Professor, Faculty of Library, Information, and Media Science

- Instructor, Research Foundation course, Jan - Feb 2021
- Instructor, Literature Survey course, Jan - Feb 2021
- Instructor, Survey and Data Analysis course, Apr - Jun 2020
- Instructor, English for specialized subjects course, Apr - Jun 2020
- Instructor, Introduction to Informatics course, Oct - Dec 2019
- Instructor, Practical Seminar course, Oct - Dec 2019
- Instructor, Introduction to Human-Computer Interaction course, Jan - Feb 2020
- Instructor, English for specialized subjects course, Apr - Jun 2019
- Instructor, Introduction to Informatics course, Oct - Dec 2018
- Instructor, Practical Seminar course, Oct - Dec 2018

- Instructor, Introduction to Human-Computer Interaction course, Jan - Feb 2019

**Kochi University of Technology**, Japan

Teaching Assistant, School of Information

- Instructor, Introduction to Human-Computer Interaction course , Nov 2015 - Feb 2016, Nov 2015 - Feb 2017
- Instructor, Advanced Human-Computer Interaction course, Nov 2015 - Feb 2016

**Indian Institute of Technology Kharagpur**, India

Teaching Assistant, School of Information Technology

- Instructor for Information System Design Laboratory, Aug 2011 - Dec 2011
- Instructor for Soft Computing Applications, January 2010 to April 2010

**Haldia Institute of Technology**, Haldia, India

Lecturer, Department of Computer Science & Engineering, Aug 2007 - Dec 2007

- Taught Software Engineering and Database Management System course

**Mallabhum Institute of Technology**, Bishnupur, India

Lecturer, Department of Computer Science & Engineering, August 2005 to July 2007

- Instructor for Algorithms and Data Structures, Software Engineering courses and Programming Lab (C & Java)

PROJECT  
EXPERIENCE

**Postdoctoral Research Fellow**  
**Center for Human-Engaged Computing**  
**Kochi University of Technology, Japan**  
**Sep '15 - Jan '18**

- **User Interface Design for the Ageing Population:** This project aims to design novel user interfaces for smartphones that suit to elderly people's movement capabilities and cognitive functioning. The specific goal is to create scientific foundations for designing user interfaces for smartphones that better suit the capabilities of older adults. We develop mathematical models of user performance that predict improvements in user interface throughput and functionality. The outcomes are interface designs that improve usability, usefulness, and help older adults avoid expensive and socially stigmatizing specialized devices. We conducted both short-term and longitudinal experiments to validate the developed ability-based interfaces with older adults having cognition and motor impairment.

**Senior Scientific Officer**  
**Sponsored Research and Industrial Consultancy**  
**Indian Institute of Technology, Kharagpur**  
**Dec '13 - Jan '15**

- **Standardization of Virtual Keyboards in Indian Languages:** Part of team designing and standardizing virtual keyboards for large and small hand-held devices to compose texts in terms of ease of use, ergonomic design speed of use, learnability, errors etc.

**Senior Project Assistant**  
**Sponsored Research and Industrial Consultancy**  
**Indian Institute of Technology, Kharagpur**  
**Dec '07 - Apr '11**

- **Development of Multimodal User Interface to Internet for Common People in India:** Part of team developing a user interface to Internet for both language and computer illiterate people through which one can interact to the Internet with three modes namely text, speech and icon.

EDUCATION

**Indian Institute of Technology Kharagpur, India** Jul '08 – Aug '15

Doctor of Philosophy, School of Information Technology  
Thesis Topic: *Development of Text Entry Mechanisms for Indic Languages*

**National Institute of Technical Teachers' Training & Research Kolkata, India**

Master of Technology, Multimedia & Software Systems Sep '05 – Aug '07

**Government College of Engineering & Textile Technology, India**

Bachelor of Technology, Computer Science & Engineering Jul '01 – Jun '05

REFERENCE

Available upon request