

**RESEARCH INTERESTS**

Image processing, computer vision, pattern recognition and applications with a focus on biometrics and assistive technologies; machine learning; human-computer interaction; augmented and virtual reality; data science

**EDUCATION****Ph.D. in Computer Science**

*Department of Computer Science, University of Georgia, Athens, GA, USA*  
 Graduated: August 2008 – G.P.A.: 4.0/4.0

**Bachelor of Science in Computer Science**

*Department of Computer Science, University of Georgia, Athens, GA, USA*  
 Graduated: December 1999 – Honors: Magna Cum Laude

**Bachelor of Science in Mathematics and Physics**

*Exam: Islamia University of Bahawalpur, Pakistan*  
*Study: Government College for Women, Bahawalpur, Pakistan*  
 Graduated: September 1995 – Grade A (2<sup>nd</sup> highest position in the Bachelor of Science Examination)

**PROFESSIONAL EXPERIENCE****Associate Professor**

*Department of Information Technology, King Saud University, Riyadh, Saudi Arabia*  
 (March 2019 – Present)

**Assistant Professor**

*Department of Information Technology, King Saud University, Riyadh, Saudi Arabia*  
 (September 2011 – February 2019)

**IT Researcher and Consultant**

*Araware LLC, Wilmington, DE, USA*  
 (2014 – Present)

*Araware is an IT research and development organization with emphasis on research collaboration with leading educational institutions around the world. Araware also tries to match OEM's around the world with university based research groups to encourage the collaborative efforts. More info at: [www.araware.com](http://www.araware.com).*

**Teaching Assistant**

*Department of Computer Science, University of Georgia, Athens, GA, USA*  
 (August 2004 – May 2007)

- CSCI 4730/6730 (Operating Systems)
- CSCI 4800/6800 (Human-Computer Interaction)
- Primary Teaching Assistant for up to four lab sections for CSCI 1100L (Introduction to Personal Computing)

**Research Assistant**

*Department of Computer Science, University of Georgia, Athens, GA, USA*  
 (January 2004 – May 2004)

**Instructor**

*Alpina School, Bahawalpur, Pakistan*  
 (September 1995 – December 1996)

**PUBLICATIONS**

1. Abir Benabid Najjar, Asma Alhussayen, and Rabia Jafri, "Usability Engineering of a Tangible User Interface Application for Visually Impaired Children," *Human-Centric Computing and Information Sciences*, vol. 11, 2021. DOI: <https://doi.org/10.22967/HCCIS.2021.11.014>

**PUBLICATIONS**

Continued...

2. Duaa AlSaeed, Ahmed Bouridane, Rabia Jafri, Nadia Al-Ghreimil, Heyam Al-Baity, Ghada Alhudhud, "A Novel Blood Vessel Extraction Using Multiscale Matched Filters with Local Features and Adaptive Thresholding", *BioScience Biotechnology Research Communications*, 2020;13(3). DOI: <http://dx.doi.org/10.21786/bbrc/13.3/18>
3. Rabia Jafri, Ameera Masoud Almasoud, Reema Mohammed Taj Alshammari, Shahad Eid Mohammed Alosaimi, Raghad Talal Mohammed Alhamad and Amzan Abdullah Saleh Aldowighri, "A Low-Cost Gaze-Based Arabic Augmentative and Alternative Communication System for People with Severe Speech and Motor Impairments," in *Proceedings of the 22<sup>nd</sup> International Conference on Human-Computer Interaction (HCI 2020) - Late Breaking Papers: Universal Access and Inclusive Design*, July 19-24, Copenhagen, Denmark. Stephanidis C., Antona M., Gao Q., Zhou J. (eds). *Lecture Notes in Computer Science (LNCS)*, vol 12426, pp. 279-290, Springer, Cham, 2020.
4. Rabia Jafri, "An Assistive Application for Developing the Functional Vision and Visuomotor Skills of Children with Cortical Visual Impairment", *Advances in Intelligent Systems and Computing: Proceedings of the 2nd International Conference on Human Systems Engineering and Design: Future Trends and Applications (IHSED 2019)*, September 16-18, 2019, Universität der Bundeswehr München, Munich, Germany. Ahram T., Karwowski W., Pickl S., Taiar R. (eds) vol 1026, pp. 773-779. Springer, Cham, 2020.
5. Rodrigo Louzada Campos, Rabia Jafri, Syed Abid Ali, Odilon Correa and Hamid R. Arabnia, "Evaluation of the Google Tango Tablet Development Kit: A Case Study of a Localization and Navigation System", *Proceedings of the 5th Annual Conference on Computational Science & Computational Intelligence (CSCI'18)*, December 13-15, Las Vegas, Nevada, USA, pp. 501-506, 2018.
6. Rabia Jafri and Marwa Mahmoud Khan, "User-Centered Design of a Depth Data Based Obstacle Detection and Avoidance System for the Visually Impaired". *Human-centric Computing and Information Sciences*, Springer Berlin Heidelberg, 2018, Volume 8, Issue 14. DOI: <https://doi.org/10.1186/s13673-018-0134-9>.
7. Rabia Jafri, Rodrigo Louzada Campos, Syed Abid Ali and Hamid R. Arabnia, "Visual and Infrared Sensor Data-Based Obstacle Detection for the Visually Impaired Using the Google Project Tango Tablet Development Kit and the Unity Engine", *IEEE Access*, IEEE Computer Society, 2018, Volume 6, pp. 443-454.
8. Rabia Jafri, Asmaa Mohammed Aljuhani and Syed Abid Ali, "A Tangible User Interface-Based Application Utilizing 3D-Printed Manipulatives for Teaching Tactual Shape Perception and Spatial Awareness Sub-Concepts to Visually Impaired Children", *International Journal of Child-Computer Interaction*, Elsevier, 2017, Volume 11, pp. 3-11.
9. Rabia Jafri, "A GPU-Accelerated Real-Time Contextual Awareness Application for the Visually Impaired on Google's Project Tango Device", *The Journal of Supercomputing*, Springer, 2017, Volume 73, Issue 2, pp. 887-899.
10. Rabia Jafri, Rodrigo Louzada Campos, Syed Abid Ali and Hamid R. Arabnia, "Utilizing the Google Project Tango Tablet Development Kit and the Unity Engine for Image and Infrared Data-Based Obstacle Detection for the Visually Impaired" (Poster paper), *Proceedings of the 2016 International Conference on Health Informatics and Medical Systems (HIMS'16)*, July 27-30, Las Vegas, Nevada, USA, pp. 163-164, 2016.

**PUBLICATIONS**

Continued...

11. Rabia Jafri and Marwa Mahmoud Khan, "Obstacle Detection and Avoidance for the Visually Impaired in Indoors Environments Using Google's Project Tango Device," in *Computers Helping People with Special Needs: 15th International Conference, ICCHP 2016, Linz, Austria, July 13-15, 2016*, Springer International Publishing, *Lecture Notes in Computer Science (LNCS)*, Volume 9759, pp. 179-185, 2016.
12. Asma Alhussayen, Rabia Jafri and Abir Benabid, "Requirements' Elicitation for a Tangible Interface-Based Educational Application for Visually Impaired Children," in *Advances in Ergonomics Modeling, Usability & Special Populations: Proceedings of the 7<sup>th</sup> International Conference on Applied Human Factors and Ergonomics (AHFE 2016), July 27-31, 2016, Walt Disney World®, Florida, USA*, M. Soares, C. Falcão, and Z. T. Ahram (Eds.), Springer International Publishing, Cham, pp. 583-596, 2017.
13. Arwa Saad Alrazooq, Bayan Abdulmonem Boreggah, Laila Ayidh Alqahtani and Rabia Jafri, "Usability Evaluation of a Leap Motion-Based Educational Application," in *Advances in Human Factors, Business Management, Training and Education: Proceedings of the 7<sup>th</sup> International Conference on Applied Human Factors and Ergonomics (AHFE 2016), July 27-31, 2016, Walt Disney World®, Florida, USA*, I. J. Kantola, T. Barath, S. Nazir, and T. Andre, Eds., ed Cham: Springer International Publishing, 2017, pp. 171-185.
14. Rabia Jafri and Syed Abid Ali, "Utilizing 3D Printing to Assist the Blind", *Proceedings of the 2015 International Conference on Health Informatics and Medical Systems (HIMS'15)*, July 27-30, Las Vegas, Nevada, USA, pp. 55-61, 2015.
15. Rabia Jafri, Asmaa Mohammed Aljuhani and Syed Abid Ali, "A Tangible Interface-based Application for Teaching Tactual Shape Perception and Spatial Awareness Sub-Concepts to Visually Impaired Children", *Proceedings of the 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015)*, July 26-30, Las Vegas, Nevada, USA, Elsevier ScienceDirect Procedia, Volume 3, pp. 5562-5569, 2015.
16. Rabia Jafri, Syed Abid Ali, Hamid R. Arabnia and Shameem Fatima, "Computer Vision-Based Object Recognition for the Visually Impaired in an Indoors Environment: a Survey," *The Visual Computer*, Springer-Verlag Berlin Heidelberg, 2014. ISSN: 1432-2315. DOI: 10.1007/s00371-013-0886-1, Volume 30, Issue 11, pp. 1197-1222 (Published online: October 15, 2013).
17. Rabia Jafri and Syed Abid Ali, "Exploring the Potential of Eyewear-Based Wearable Display Devices for Use by the Visually Impaired", *Proceedings of the 3rd International Conference on User Science and Engineering (i-USEr 2014)*, September 2-5, Shah Alam, Malaysia, IEEE Computer Society, pp. 119-124, 2014.
18. Rabia Jafri, "Electronic Braille Blocks: A Tangible Interface-based Application for Teaching Braille Letter Recognition to Very Young Blind Children", *Proceedings of the 14th International Conference on Computers Helping People with Special Needs (ICCHP 2014)*, July 9-11, Paris, France, Springer International Publishing, *Lecture Notes in Computer Science (LNCS)*, Volume 8548, pp. 551-558, 2014.
19. Rabia Jafri and Syed Abid Ali, "A Multimodal Tablet-based Application for the Visually Impaired for Detecting and Recognizing Objects in a Home Environment", *Proceedings of the 14th International Conference on Computers Helping People with Special Needs (ICCHP 2014)*, July 9-11, Paris, France, Springer International Publishing, *Lecture Notes in Computer Science (LNCS)*, Volume 8547, pp. 356-359, 2014.

**PUBLICATIONS**

Continued...

20. Rabia Jafri and Syed Abid Ali, "A GPS-based Personalized Pedestrian Route Recording Smartphone Application for the Blind", *Proceedings of the 16<sup>th</sup> International Conference on Human-Computer Interaction (HCI 2014) – Posters' Extended Abstracts*, June 22-27, Crete, Greece, Springer International Publishing, *Communications in Computer and Information Science (CCIS)*, Volume 435, pp. 232-237, 2014.
21. Rabia Jafri, Amal Saad Alkhunji, Ghada Khaled Alhader, Hanan Rabeiah Alrabeiah, Noura Abdullah Alhammad, Sara Khader Alzahrani, "Smart Travel Planner: A Mashup of Travel-Related Web Services," *Proceedings of The 2013 International Conference on Current Trends in Information Technology (CTIT 2013)*, December 11-12, Dubai, UAE, (Technical co-sponsors: IEEE Computer Society, ACM, IBM, SAP, Cisco), IEEE Computer Society, pp. 181-185, 2013.
22. Rabia Jafri, Syed Abid Ali and Hamid R. Arabnia, "Computer Vision-Based Object Recognition for the Visually Impaired Using Visual Tags," *Proceedings of the 2013 International Conference on Image Processing, Computer Vision, and Pattern Recognition (IPCV '13)*, July 22-25, Las Vegas, Nevada, USA, CSREA Press, ISBN: 1-60132-253-4, vol. 2, pp. 400-406, 2013.
23. Rabia Jafri, Syed Abid Ali and Hamid R. Arabnia, "Face Recognition for the Visually Impaired," *Proceedings of the 2013 International Conference on Information and Knowledge Engineering (IKE '13)*, July 22-25, Las Vegas, Nevada, USA, CSREA Press, ISBN: 1-60132-251-8, pp. 153-159, 2013.
24. Rabia Jafri and Hamid R. Arabnia, "A Survey of Face Recognition Techniques," *Journal of Information Processing Systems*, Volume 5, Issue 2, pp. 41-68, 2009.
25. Rabia Jafri, Hamid R. Arabnia and K. J. Simpson, "An Integrated Face-Gait System for Automatic Recognition of Humans," *Proceedings of the 2008 International Conference on Security and Management (SAM'08)*, June 14-17, Las Vegas, Nevada, USA, (Academic Co-Sponsors: Research Labs at Harvard, Georgia Institute of Technology, Purdue, University of Texas at Austin, Texas, ...), pp. 571-581, 2008.
26. Rabia Jafri and Hamid R. Arabnia, "Fusion of Face and Gait for Automatic Human Recognition," *Proceedings of the 5th International Conference on Information Technology - New Generations (ITNG 2008: Data Mining Track)*, April 7-9, Las Vegas, Nevada, USA; IEEE Computer Society, pp. 167-173, 2008.
27. Rabia Jafri and Hamid R. Arabnia, "A Multi-Resolution Hierarchical Approach for Face Recognition," *Proceedings of the 2007 International Conference on Image Information and Knowledge Engineering (IKE'07)*, June 25-28, Las Vegas, Nevada, USA, (Academic Co-Sponsors: Research Labs at MIT, Harvard, Purdue, University of Texas at Austin, Texas, ...), pp. 231-239, 2007.
28. Rabia Jafri and Hamid R. Arabnia, "A Multi-Level Component-Based Approach for Face Recognition," *Proceedings of the 2007 International Conference on Image Processing, Computer Vision, and Pattern Recognition (IPCV'07)*, June 25-28, Las Vegas, USA, (Academic Co-Sponsors: Research Labs at MIT, Harvard, Purdue, University of Texas at Austin, Texas, ...), pp. 30-39, 2007.
29. Rabia Jafri and Hamid R. Arabnia, "PCA-Based Methods for Face Recognition," *Proceedings of the 2007 International Conference on Security and Management (SAM'07)*, June 25-28, Las Vegas, USA, (Academic Co-Sponsors: Research Labs at MIT, Harvard, Purdue, University of Texas at Austin, Texas, ...), pp. 534-541, 2007.

**PUBLICATIONS**

Continued...

30. Rabia Jafri and Hamid R. Arabnia, "A Survey of Component-Based Face Recognition Approaches," *Proceedings of the 2007 International Conference on Artificial Intelligence (ICAI'07)*, June 25-28, Las Vegas, USA, (Academic Co-Sponsors: Research Labs at MIT, Harvard, Purdue, University of Texas at Austin, Texas, ...), pp. 103-113, 2007.
31. Rabia Jafri and Hamid R. Arabnia, "Analysis of Subspace-Based Face Recognition Techniques under Changes in Imaging Factors," *Proceedings of the 4th International Conference on Information Technology - New Generations (ITNG 2007; Data Mining Track)*, April 2-4, Las Vegas, USA; IEEE Computer Society, pp. 406-413, 2007.
32. Gregory Silver, Angela Maduko, Rabia Jafri, John A. Miller and Amit P. Sheth, "Modeling and Simulation of Quality of Service for Composite Web Services," *Proceedings of the 7th World Multiconference on Systemics, Cybernetics and Informatics (SCI'03)*, July 2003, Orlando, Florida, USA, Volume 1, pp. 420-425, 2003.

**AWARDS, HONORS & GRANTS**

**Consultant (with contribution towards the research and development of a mobile eye-tracking system and machine learning based data analysis) for Project: PACS1 Syndrome as a Paradigm for the Remote Assessment of Gaze, Social Interactions and Gait in Autism Spectrum Disorders.**

Application for the "2021 Human Cognitive and Behavioral Science" grant submitted to Simons Foundation: Autism Research Initiative (May 2021). Principal Investigator: Dr. Marie Schaefer (University of Geneva, Switzerland). Co-Investigators: Dr. Daniel Tarquinio (Center for Rare Neurological Disorders, Atlanta, GA, USA), Dr. David Hessler (MIND Institute, University of California, Davis, CA, USA), Dr. Anne Berg (Ann & Robert H. Lurie Children's Hospital, Chicago, IL, USA). Consultants: Dr. Hassan Ghasemzadeh (Washington State University, Pullman, WA, USA), Syed Abid Ali and Dr. Rabia Jafri Ali (Araware LLC, USA).

**Research awards and grants for articles published in ISI-indexed journals**

Research Center of the Female Scientific and Medical Colleges,  
Deanship of Scientific Research, King Saud University (2019, 2017, 2013)

(Articles:

- Rabia Jafri and Marwa Mahmoud Khan, "User-Centered Design of a Depth Data Based Obstacle Detection and Avoidance System for the Visually Impaired". *Human-centric Computing and Information Sciences*, Springer Berlin Heidelberg, 2018, Volume 8, Issue 14. <https://doi.org/10.1186/s13673-018-0134-9>.
- Rabia Jafri, Rodrigo Louzada Campos, Syed Abid Ali and Hamid R. Arabnia, "Visual and Infrared Sensor Data-Based Obstacle Detection for the Visually Impaired Using the Google Project Tango Tablet Development Kit and the Unity Engine", *IEEE Access*, IEEE Computer Society, 2018, Volume 6, pp. 443-454.
- Rabia Jafri, "A GPU-Accelerated Real-Time Contextual Awareness Application for the Visually Impaired on Google's Project Tango Device", *The Journal of Supercomputing*, Springer, 2017, Volume 73, Issue 2, pp. 887-899).
- Rabia Jafri, Syed Abid Ali, Hamid R. Arabnia and Shameem Fatima, "Computer Vision-based object recognition for the visually impaired in an indoors environment: a survey," *The Visual Computer*, Springer-Verlag Berlin Heidelberg, 2014. ISSN: 1432-2315. DOI: 10.1007/s00371-013-0886-1, Volume 30, Issue 11, pp. 1197-1222 (Published online: October 15, 2013)).

**Co-Investigator of Project: iNaVI: Indoor Navigation for the Visually Impaired using User Centered Design.**

Project recommended for funding under the Kingdom of Saudi Arabia National Science, Technology and Innovation Plan (May 2015). Principal Investigator: Dr. Abir Benabid Najjar (King Saud University, Saudi Arabia). Co-Investigators: Dr. Eiman Kanjo (Nottingham Trent University, U.K.), Dr. Henda Chorfi, Dr. Manar Hosny and Dr. Rabia Jafri (King Saud University, Saudi Arabia).

**AWARDS, HONORS & GRANTS**

Continued...

**Doctoral Dissertation Completion Award**

Graduate School  
University of Georgia, Athens, GA, USA (2007 – 2008)

**Outstanding Graduate Teaching Assistant Award**

Office of the Senior Vice President for Academic Affairs and Provost  
University of Georgia, Athens, GA, USA (2007)

**Graduated Magna Cum Laude**

Bachelor of Science in Computer Science  
University of Georgia, Athens, GA, USA (December 1999)

**Presidential Scholar**

Bachelor of Science in Computer Science  
University of Georgia, Athens, GA, USA (Spring 1999 and Fall 1999)

**Dean's List**

Bachelor of Science in Computer Science  
University of Georgia, Athens, GA, USA (Fall 1998)

**2<sup>nd</sup> highest position in the Bachelor of Science Examination**

Bachelor of Science in Mathematics and Physics  
Islamia University, Bahawalpur, Pakistan (September 1995)

**2<sup>nd</sup> highest position in the F. Sc. Intermediate Examination (Pre-Engineering)**

F. Sc. Intermediate (Pre-Engineering)  
Board of Intermediate and Secondary Education, Bahawalpur, Pakistan (September 1993)

**National Scholarship for the Bachelor of Science Examination**

Government of Pakistan  
Bahawalpur, Pakistan (1995)

**National Scholarship for the F. Sc. Intermediate Examination**

Government of Pakistan  
Bahawalpur, Pakistan (1993)

**National Scholarship for the Secondary School Certificate Examination**

Government of Pakistan  
Bahawalpur, Pakistan (1991)

**PROFESSIONAL ACTIVITIES**

- **Member, Brainiac Council**  
Part of Cognixion, Inc., Santa Barbara, CA, USA ([www.cognixion.com](http://www.cognixion.com))  
Contributions include: offer of expertise and collaboration towards the advancement of Augmentative and Alternative Communication (AAC) technologies (January 2021 – present)
- **Reviewer, Journal of Imaging** (ESCI-indexed journal published by MDPI), June 2020
- **Reviewer, IEEE Access** (ISI-indexed journal published by IEEE), May 2019
- **Reviewer, Sensors** (ISI-indexed journal published by MDPI), November 2017

**PROFESSIONAL  
ACTIVITIES***Continued...*

- **Member, KACST ACM SIGCHI Chapter**  
Local chapter of ACM SIGCHI (Special Interest Group on Computer-Human Interaction) (May 2017 – present)
- **Member, Arab Women in Computing (ArabWIC)**  
Regional chapter of the Anita Borg Institute for Women and Technology (November 2015 – present)
- **Member, Editorial Board of *The Journal of Supercomputing*** (ISI-indexed journal published by Springer) (December 2013 – present)
- **Member, Software and Knowledge Engineering Research Group (SKERG)**  
*King Saud University, Riyadh, Saudi Arabia* (October 2012 – present)
- **Member, Bioinformatics Research Group (BIOING)**  
*King Saud University, Riyadh, Saudi Arabia* (October 2012 – December 2016)
- **Member, Ph.D. advisory committee** for Syed Ali Reza Khatamian, Ph.D. candidate at the Department of Computer Science, University of Georgia, Athens, GA, USA (Fall 2015 – Summer 2016)
- **Reviewer, *IEEE Transactions on Human-Machine Systems*** (ISI-indexed journal published by IEEE), December 2015
- **Reviewer, *Computer Vision and Image Understanding*** (ISI-indexed journal published by Elsevier), July 2015
- **Reviewer**, poster competition for ***the Second Bioinformatics Scientific Meeting in KSU (BioSM-KSU)*** organized by the Bioinformatics Research Group at King Saud University, Riyadh, Saudi Arabia on May 4-5, 2015
- **Reviewer, *The Journal of Supercomputing*** (ISI-indexed journal published by Springer), March 2015
- **Finance officer, *Software and Knowledge Engineering Research Group, King Saud University, Riyadh, Saudi Arabia*** (2014-2015)
- **Reviewer, *The 2<sup>nd</sup> Workshop on Assistive Computer Vision and Robotics (ACVR 2014)***, in conjunction with *The European Conference on Computer Vision (ECCV 2014)*, Zurich, Switzerland, September 12, 2014
- **Reviewer**, poster competition for the ***First Bioinformatics Scientific Meeting in KSU (BioSM-KSU)*** organized by the Bioinformatics Research Group at King Saud University, Riyadh, Saudi Arabia on May 4, 2014
- **Reviewer, *The Sixth Annual Undergraduate Research Conference on Applied Computing (URC 2014)***, Zayed University, Dubai, UAE, April 30-May 1, 2014
- **Member, The Technical Program Committee for *The Sixth Annual Undergraduate Research Conference on Applied Computing (URC 2014)***, Zayed University, Dubai, UAE, April 30-May 1, 2014
- **Member**, The International Program Committee for ***The 2014 International Conference on***

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**PROFESSIONAL  
ACTIVITIES**  
Continued...

**Computational Science and Computational Intelligence (CSCI '14)**, Las Vegas, Nevada, USA, March 10-13, 2014

- **Chair of Session: Face, gaze, expression recognition, detection, tracking, and other related methods** at **The 2013 International Conference on Image Processing, Computer Vision, and Pattern Recognition (ICCV '13)**, Las Vegas, Nevada, USA, July 22-25, 2013
- **Coordinator, The First Information Technology Research Forum** held by the Information Technology Department, King Saud University, Riyadh, Saudi Arabia on May 14, 2013
- **Reviewer**, posters for **The First Graduate Students Annual Scientific Meeting (GSASM 2013)** organized by the Deanship of Graduate Studies, King Saud University, Riyadh, Saudi Arabia during April 24-25, 2013
- **Reviewer, The Fifth Annual Undergraduate Research Conference on Applied Computing (URC 2013)**, Zayed University, Dubai, UAE, May 1-2, 2013
- **Member**, the organization committee for the **"I can! Apply my Computing background in Bioinformatics" Workshop** held by the Bioinformatics Research Group at King Saud University, Riyadh, Saudi Arabia on April 6, 2013

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**PROFESSIONAL  
ACTIVITIES:  
PRESENTATIONS**

- **A Low-Cost Gaze-Based Arabic Augmentative and Alternative Communication System for People with Severe Speech and Motor Impairments**  
Presented at the 22<sup>nd</sup> International Conference on Human-Computer Interaction (HCI 2020)  
*Copenhagen, Denmark (July 21, 2020)*
- **Utilizing 3D Printing to Assist the Blind**  
Presented, along with Syed Abid Ali, at the 2015 International Conference on Health Informatics and Medical Systems (HIMS'15)  
*Las Vegas, USA, (July 29, 2015)*
- **A Tangible Interface-based Application for Teaching Tactual Shape Perception and Spatial Awareness Sub-Concepts to Visually Impaired Children**  
Presented at the 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015)  
*Las Vegas, Nevada, USA (July 29, 2015)*
- **iNaVI: Indoor Navigation for the Visually Impaired**  
Presented, along with other project collaborators, as part of the seminar series of The Software and Knowledge Engineering Research Group, King Saud University  
*Riyadh, Saudi Arabia (January 27, 2015)*
- **A GPS-based Personalized Pedestrian Route Recording Smartphone Application for the Blind**  
Presented as part of the seminar series of The Software and Knowledge Engineering Research Group, King Saud University  
*Riyadh, Saudi Arabia (October 28, 2014)*
- **Google Glass Demonstration**  
Journal Club, Software and Knowledge Engineering Research Group, King Saud University  
*Riyadh, Saudi Arabia (September 16, 2014)*



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**PROFESSIONAL  
ACTIVITIES:  
PRESENTATIONS**  
Continued...

- ***Electronic Braille Blocks: A Tangible Interface-based Application for Teaching Braille Letter Recognition to Very Young Blind Children***  
Presented at The 14th International Conference on Computers Helping People with Special Needs (ICCHP 2014)  
*Paris, France (July 11, 2014)*
- ***A Multimodal Tablet-based Application for the Visually Impaired for Detecting and Recognizing Objects in a Home Environment***  
Presented at The 14th International Conference on Computers Helping People with Special Needs (ICCHP 2014)  
*Paris, France (July 10, 2014)*
- ***Computer vision-based object recognition for the visually impaired in an indoors environment: a survey***  
Presented as part of the seminar series of The Software and Knowledge Engineering Research Group, King Saud University  
*Riyadh, Saudi Arabia (May 20, 2014)*
- ***Computer Vision-based Object Recognition for the Visually Impaired Using Visual Tags***  
Presented at The 2013 International Conference on Image Processing, Computer Vision, and Pattern Recognition (ICCV '13)  
*Las Vegas, NV, USA (July 2013)*
- ***Publishing and Research Collaboration***  
A presentation on publishing and research collaboration to graduate and post-graduate students and faculty  
*The Islamia University of Bahawalpur, Bahawalpur, Pakistan (January 2013)*
- ***Analysis of Subspace-Based Face Recognition Techniques under Changes in Imaging Factors***  
Presented at The 4th International Conference on Information Technology - New Generations (ITNG 2007; Data Mining Track)  
*Las Vegas, NV, USA (April 2007)*
- ***An Introduction to Face Recognition***  
Guest Lecturer (CSCI 8810 – Advanced Image Processing and Computer Graphics)  
*Department of Computer Science, University of Georgia, Athens, GA, USA (March 2005)*
- ***The Anatomy of a Context-Aware Application***  
Random Topics in Systems (RATS) seminar  
*Department of Computer Science, University of Georgia, Athens, GA, USA (March 2001)*

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**TEACHING**
**Courses:**

- **Graduate**
  - Information Visualization (IT 548)
  - Interactive Multimedia Applications (IT 544)
  - Virtual Reality Technologies (IT 553)
  - Usability and User Experience in Information Technology (IT 543)
- **Undergraduate**
  - Advanced Human-Computer Interaction (CAP 490 / IT 443)

**TEACHING***Continued...*

- Operating Systems (IT 325 (previously IT 421), CSC 227)
- Fundamentals of Multimedia (IT 342)
- Data Structures (IT 212)
- Seminar (IT 499)

**Supervision:**

- **Graduate**

- Co-supervision of Ph.D. dissertation in Computer Science, University of Georgia, Athens, GA, USA
- Co-supervision of Ph.D. thesis in Computer Science, External Joint Supervision Program (EJSP) for doctoral students at Northumbria University, Newcastle-Upon-Tyne, U.K.
- M.Sc. Graduation Project in Information Technology, King Saud University, Riyadh, Saudi Arabia
- Co-supervision of M.Sc. Thesis in Software Engineering, King Saud University, Riyadh, Saudi Arabia

- **Undergraduate**

- B.Sc. Graduation Project in Information Technology, King Saud University, Riyadh, Saudi Arabia
- B.Sc. Graduation Project in Information Sciences, King Saud University, Riyadh, Saudi Arabia
- Co-supervision of B.Sc. thesis in Computation and Civil Construction at the Federal Technological Center of Minas Gerais, Brazil
- Co-supervision of directed study in Computer Science project at the University of Georgia, Athens, GA, USA

- **See also “SUPERVISION” section for additional details**

**SUPERVISION****Ph.D. Theses:**

- Rodrigo Louzada Campos, “Artificial Intelligence-based Computer Vision Approaches for Bioimage Data Analysis”. Ph.D. in Computer Science, University of Georgia, Athens, Georgia, U.S.A. (Fall 2018 – Present)  
(Co-supervised with Prof. Hamid R. Arabnia, Department of Computer Science, University of Georgia, Athens, GA, USA)
- Duaa AlSaeed, “Statistical Approaches of Image Segmentation and Analysis”. Ph.D. in Computer Science, Northumbria University, Newcastle-Upon-Tyne, U.K. (graduated Spring 2015)  
(Internal supervisor from King Saud University under the External Joint Supervision Program: Fall 2013-Spring 2015)  
(External supervisor: Prof. Ahmed Bouridane, Department of Computer Science and Digital Technologies, Northumbria University, Newcastle-Upon-Tyne, U.K.)

**M.Sc. Theses:**

- Shaden Alzeer, “User Centered Interaction Design of Indoor Navigation Applications for Visually Impaired People”. M.Sc. in Software Engineering, King Saud University, Riyadh, Saudi Arabia (Fall 2015 – Summer 2017)  
(Co-supervised with: Dr. Abir Benabid Najjar, Department of Software Engineering, King Saud University, Saudi Arabia)
- Asma Abdulrahman Alhussayen, “User experience and Usability Evaluation of Tangible Interface-based Applications for Visually Impaired Children”. M.Sc. in Software

**SUPERVISION***Continued...*

Engineering, King Saud University, Riyadh, Saudi Arabia (Fall 2015 – Spring 2017)  
(Co-supervised with: Dr. Abir Benabid Najjar, Department of Software Engineering, King Saud University, Saudi Arabia)

**M.Sc. Projects:**

- Maitha Alruthea, “Tangible User Interface-based Application for Children with Autism Spectrum Disorder for Behavioral Treatment Support”. M.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Fall 2018 – Fall 2020)
- Neda Baras, “Smart Mirror for Face Reading”. M.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Spring 2017 – Fall 2017)  
(Supervised Part 2 of the project (Fall 2017). Part 1 supervised by Dr. Sanaa Ghouzali, Department of Information Technology, King Saud University, Saudi Arabia)
- Marwa Mahmoud Khan, “Obstacle Detection for the Visually Impaired during Navigation in Indoor Environments”. M.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Spring 2016 – Fall 2016)

**B.Sc. Thesis:**

- Rodrigo Louzada Campos, “Evaluation of the Google Tango Tablet Development Kit: A Case Study of Localization and Navigation in Indoor Environments”. B.Sc. in Computation and Civil Construction, Federal Technological Center of Minas Gerais, Brazil (Spring 2017 – Fall 2017)  
(Co-supervised with: Odilon Correa da Silva, Department of Computation and Civil Construction, Federal Technological Center of Minas Gerais, Brazil; Syed Abid Ali, Araware LLC, Wilmington, DE, USA; and Prof. Hamid R. Arabnia, Department of Computer Science, University of Georgia, Athens, GA, USA)

**Directed Study in Computer Science Project:**

- Rodrigo Louzada Campos, “Utilizing the Google Project Tango Tablet Development Kit and the Unity Engine for Image and Infrared Data-Based Obstacle Detection for the Visually Impaired”. CSCI 4950: Directed Study in Computer Science, offered as part of the B.S. in Computer Science program at The University of Georgia, Athens, Georgia, U.S.A. (Spring 2016 – Summer 2016)  
(Project co-supervised with Prof. Hamid R. Arabnia, Department of Computer Science, University of Georgia, Athens, GA, USA and Syed Abid Ali, Araware LLC, Wilmington, DE, USA)

**B.Sc. Graduation Projects:**

- Thekra Salman Bin Ageef, Rahaf Abdullah Al-Shahrani, Ghaida Fahad Al-Othman, Latifa Othman Al-Ageel, “Calma: A Biofeedback Mobile Game for Anxiety Self-Regulation”. B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Spring 2021 – Present)
- Raghad Bin Suhaym, Sara Ali Bajaba, Emtenan Alzahrani, Hana Alrabiah, “Fly to Focus: A Game-Based System for the Treatment and Remote Assessment of Attentive Behavior of Children with Attention Deficit Hyperactivity Disorder (ADHD)”. B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Fall 2020 – Spring 2021)
- Reema Alshammari, Amzan Aldowighri, Raghad Alhamad and Shahad Alosaimi, “An augmentative and alternative communication tool for people with speech and motor impairments”. B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Fall 2019 – Spring 2020)

**SUPERVISION**

Continued...

- Conference paper based on this project: Rabia Jafri, Ameera Masoud Almasoud, Reema Mohammed Taj Alshammari, Shahad Eid Mohammed Alosaimi, Raghad Talal Mohammed Alhamad and Amzan Abdullah Saleh Aldowighri, "A Low-Cost Gaze-Based Arabic Augmentative and Alternative Communication System for People with Severe Speech and Motor Impairments," in *Proceedings of the 22<sup>nd</sup> International Conference on Human-Computer Interaction (HCI 2020) - Late Breaking Papers: Universal Access and Inclusive Design*, July 19-24, Copenhagen, Denmark. Stephanidis C., Antona M., Gao Q., Zhou J. (eds). *Lecture Notes in Computer Science (LNCS)*, vol 12426, pp. 279-290, Springer, Cham, 2020.
- Maha Saud Alsayari, Alhanouf Abdulrahman Alkhamis, Amani Khalaf Almutairi, Linah Saleh Alhassoun, Munira Abdullah Aljbreen, "Barakah: A herbal medicine information retrieval and ordering application for Saudi Arabia". B.Sc. in Information Sciences, King Saud University, Riyadh, Saudi Arabia (Fall 2019 – Spring 2020)
- Bedour Al-Rashed, Hadeel Al-Tammami, Raghad Al-Qassem and Sara Al-Fifi, "An educational application for children with cortical visual impairment". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Spring 2018 – Fall 2018)
- Shatha Musaed Althobiti, Nora Abdualrazaq Alattas, Amal Abdullah Albraiki and Sarah Hassan Almuhawwis, "Tac-Trace: A tangible user-interface based application to teach visually impaired children about shapes". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Fall 2017 – Spring 2018)
  - Project awarded 4<sup>th</sup> place in the Graduation Project Competition organized by the Takaful Charity Foundation, Riyadh, Saudi Arabia on May 1, 2018
- Dalia ALHejji, Sara Alareefi, Nada Alzahrani, Modi Aljedaie, Ohoud Alqrnai, "Academic Advising System". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Spring 2015 – Fall 2015)
- Ghadah Al-Shameri, Norah Saad Al-Omair, Heba Al-Omair, Abeer Al-Shameri, Amal Al-Shaibani, "IT learning portal and services catalog". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Spring 2014 – Fall 2014)
  - Project poster awarded 2<sup>nd</sup> place in the 2<sup>nd</sup> IT Research Day at King Saud University, Saudi Arabia on April 23, 2014
- Amal Alassaf, Sadeem Bukhari, Noura Albougami, Noura Alshamri, "Mayfly: A social networking iPhone application for Saudi Arabia focusing on events". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Fall 2013 – Spring 2014)
  - Project presentation awarded 2<sup>nd</sup> place in the 2<sup>nd</sup> IT Research Day at King Saud University, Saudi Arabia on April 23, 2014
  - Project abstract accepted for poster presentation in the Sixth Annual Undergraduate Research Conference on Applied Computing (URC 2014), Zayed University, Dubai, UAE, April 30-May 1, 2014
- Sarah Makhshen, Bushra Bagazi, Asyah Salem, Kholod Al-Kathiry, Safa Abu Alasrar, "Mobile Vision: mobile phone-based object recognition for the visually impaired". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Spring 2013 – Fall 2013)
  - Project abstract accepted for poster presentation in the Sixth Annual Undergraduate Research Conference on Applied Computing (URC 2014), Zayed

**SUPERVISION**

Continued...

University, Dubai, UAE, April 30-May 1, 2014

- Abeer Al-Shehri, Afnan Al-Hano, Alaa Al-Barrak, Hind Al-Mahmoud, and Khazma Al-Shaharani, "Hotel website creation, management and reservation system". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Fall 2012 – Spring 2013)
  - Project abstract accepted for poster presentation in the Fifth Annual Undergraduate Research Conference on Applied Computing (URC 2013), Zayed University, Dubai, UAE, May 1-2, 2013
- Amal Saad Alkhunji, Ghada Khaled Alhader, Hanan Rabiea Alrabiea, Noura Abdullah Alhammad, Sara Khader Alzahrani, "Smart Travel Planner". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Spring 2012 – Fall 2012)
  - Project abstract accepted for oral presentation in the Fifth Annual Undergraduate Research Conference on Applied Computing (URC 2013), Zayed University, Dubai, UAE, May 1-2, 2013
  - Conference paper based on this project: Rabia Jafri, Amal Saad Alkhunji, Ghada Khaled Alhader, Hanan Rabeiah Alrabeiah, Noura Abdullah Alhammad, Sara Khader Alzahrani, "Smart Travel Planner: A mashup of travel-related web services," *Proceedings of The 2013 International Conference on Current Trends in Information Technology (CTIT 2013)*, December 11-12, Dubai, UAE, (Technical co-sponsors: IEEE Computer Society, ACM, IBM, SAP, Cisco), IEEE Computer Society, pp. 181-185, 2013
- Abrar M. Al-Moajel, Ghadah A. Al-Tassan, Adhwa N. Al-Kathiry, "FRAT: Face Recognition for Automated Tagging". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Fall 2011 – Spring 2012)
  - Project abstract accepted for oral presentation in the Fourth Annual Undergraduate Research Conference on Applied Computing (URC 2012), Zayed University, Dubai, UAE, April 18-19, 2012
- Nada Al-Rashoodi, Noha Al-Modkhali, Alaa Al-Omran, Monirah Al-Swaih, Jameelah Al-Otibi, "Automatic log in/ log out based on face recognition". B.Sc. in Information Technology, King Saud University, Riyadh, Saudi Arabia (Fall 2011 – Spring 2012)

**ADMINISTRATIVE SERVICES TO THE UNIVERSITY: FEATURED**

- Head, Graduation Project 2 Committee (August 2014 – January 2017, January 2018 - present)
  - Member, Graduation Project 2 Committee (August 2014 – present)
- Head, Graduation Project Advisory Committee (August 2014 – January 2017)
- Head, Graduation Project Committee (Spring 2016)
- Course coordinator for
  - IT 548: Information Visualization (Fall 2020)
  - IT 544: Interactive Multimedia Applications (Fall 2019)
  - IT 553: Virtual Reality Technologies (Fall 2018)
  - IT 342: Fundamentals of Multimedia (Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2018)
  - IT 497: Graduation Project 2 (Fall 2014 - Fall 2016, Spring 2018 - present)
  - IT 543: Usability and User Experience in Information Technology (Fall 2014, Fall 2015, Spring 2016)
  - IT 421/IT 325: Operating Systems (Spring 2012, Spring 2013, Fall 2013, Spring 2014,

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**ADMINISTRATIVE SERVICES TO THE UNIVERSITY: FEATURED**  
*Continued...*

- Spring 2015)
  - IT 443: Human Computer Interaction (Fall 2012, Spring 2015, Spring 2016, Spring 2019)
  - IT 212: Data Structures (Fall 2014, Fall 2016, Spring 2017)
- Member, Committee for reviewing and reformulating the course description and specification for a new course on Applied Computer Vision (Fall 2019)
- Member, Curriculum Review and Development Committee (CRDC) group for proposing courses for the IoT and Networks track (Spring 2017)
- Member, Education Evaluation Commission (EEC) committee (Spring 2017, Spring 2018 - present)
- Member, National Commission for Academic Accreditation and Assessment (NCAAA) committee (Fall 2015, Spring 2016)
- Member, doctoral thesis review committees for promotion requests from lecturer to assistant professor (Spring 2014, Fall 2015, Spring 2016, Spring 2017, Spring 2018, Fall 2018, Fall 2019)
- Member, Masters' Program Committee for the newly initiated MSc in Information Technology program (Fall 2014, Spring 2015)
- Member, committee for coordinating the nomination of projects for the annual College of Computer and Information Sciences' graduation projects' competition (April–May 2015, April-May 2016)
- Member, proposal review committee for Master of Science in Biomedical Information Technology Program (May 2015)
- Member, website (English version) update committee (Spring 2014)
- Member, committee for recommending scientific organizations to the College of Computer and Information Sciences to aid in approving conference attendance requests (Fall 2013)
- Member, benchmarks' review committee for the proposed Masters program in Information Technology (Spring 2013)
- Coordinator, The First Information Technology Research Forum held by the Information Technology Department, King Saud University, Riyadh, Saudi Arabia (May 14, 2013)
- Member, committee for formulating rubrics for the evaluation criteria for Information Technology Graduation Project 1 and Graduation Project 2 (Spring 2012)

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**ADMINISTRATIVE SERVICES TO THE UNIVERSITY: OTHER**

- Academic advisor for Information Technology Department's Masters students (August 2014 – present)
- Member, Examination committees for Information Sciences Department's B.Sc. Graduation Project 1 and 2 (Fall 2019 - Spring 2020)
- Member, Examination committees for Information Technology Department's B.Sc. Graduation Project 1 and 2 (Fall 2011 - Fall 2018)

**ADMINISTRATIVE SERVICES TO THE UNIVERSITY: OTHER***Continued...*

- Member, Examination committee for Information Technology Department's M.Sc. Graduation Project 1 and 2 (Spring 2018 - present)

**PROFESSIONAL DEVELOPMENT**

- "Deep Learning with Tensorflow" by IBM Developer Skills Network. Certificate earned on December 24, 2019
- "Deep Learning Essentials with Keras" by IBM Developer Skills Network. Certificate earned on December 7, 2019
- "Machine Learning with Python" by IBM Developer Skills Network. Certificate earned on November 24, 2019
- "AI: The Future of Work and Talent" workshop, Gartner, College of Computer and Information Sciences, King Saud University, Riyadh, Saudi Arabia, April 10, 2019
- "Convolutional Neural Networks" workshop, Computational Intelligence Research Group, King Saud University, Riyadh, Saudi Arabia, April 10, 2018
- "Behavioral Archetypes in UX Design" workshop, Software and Knowledge Engineering and Research Group, King Saud University, Riyadh, Saudi Arabia, November 7, 2017
- "Brain-Computer Interaction Research and Development" workshop, Software and Knowledge Engineering and Research Group, King Saud University, Riyadh, Saudi Arabia, October 31, 2017
- "OpenCV workshop", Software and Knowledge Engineering and Research Group, King Saud University, Riyadh, Saudi Arabia, April 12, 2016
- "Human Motion Tracking and Recognition with Microsoft Kinect" tutorial, The 2015 World Congress in Computer Science, Computer Engineering, and Applied Computing, Las Vegas, Nevada, USA, July 28, 2015
- "Morae Training Workshop", Software and Knowledge Engineering and Research Group, King Saud University, Riyadh, Saudi Arabia, November 5, 2014
- "Morae tutorial", Usability Lab, Graduate School of Library and Information Science, Simmons College, Boston, Massachusetts, July 29, 2014
- "Smart Classrooms" Workshop, Deanship of E-Learning, King Saud University, Riyadh, Saudi Arabia, January 28, 2014
- "Genome Rearrangement Workshop", Bioinformatics Research Group, King Saud University, Riyadh, Saudi Arabia, November 3, 2013
- "MATLAB and Image Processing Workshop", Software and Knowledge Engineering and Research Group, King Saud University, Riyadh, Saudi Arabia, October 29, 2013
- "I can! Apply my Computing background in Bioinformatics Workshop", Bioinformatics Research Group, King Saud University, Riyadh, Saudi Arabia, April 6, 2013
- "Hands-on Experience in Bioinformatics Workshop", Bioinformatics Research Group, King

**PROFESSIONAL DEVELOPMENT***Continued...*

Saud University, Riyadh, Saudi Arabia, February 23 and March 2, 2013

- “The 2nd Annual CCIS Teaching Best Practices Workshop”, King Saud University, Riyadh, Saudi Arabia, February 6, 2013
- “The Brain-Computer Interaction Workshop”, Software and Knowledge Engineering and Research Group, King Saud University, Riyadh, Saudi Arabia, January 13, 2013
- Workshop on KSU Mentoring Program, King Saud University, Riyadh, Saudi Arabia, October 12, 2012
- “GRSC 7770: Seminar for Graduate Teaching Assistants”, *Graduate School, University of Georgia, Athens, GA, USA. Fall 2005*

**LANGUAGES**

Fluent in English and Urdu; familiarity with Arabic

**ADDITIONAL INFORMATION**

- Publications on Google Scholar  
<https://scholar.google.com/citations?user=YrNLTZUAAAAJ&hl=en>
- Publications on ResearchGATE  
[https://www.researchgate.net/profile/Rabia\\_Jafri](https://www.researchgate.net/profile/Rabia_Jafri)
- My information on LinkedIn  
<https://www.linkedin.com/in/rabiajafri/>
- My information on King Saud University’s Website  
<http://fac.ksu.edu.sa/rjafri>
- Latest version of CV can be downloaded from:  
<http://rabiajafriali.com/>