

Waqar Saleem

Associate Professor, Computer Science
St. Mary's College of Maryland
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Education

PhD Computer Science (Computer Graphics)	2010
– Max Planck Institut (MPI) Informatik / Saarland University, Germany.	
– Dissertation: <i>Digital Processing and Management Tools for 2D and 3D Shape Repositories</i>	
M.Sc. Computer Science	2004
– Max Planck Institut (MPI) Informatik / Saarland University, Germany.	
– Thesis: <i>A Flexible Framework for Learning-based Surface Reconstruction</i>	
BS Computer Science	2002
– Mohammad Ali Jinnah University, Pakistan.	

Work Experience

St. Mary's College of Maryland, USA	2025–
– Associate Professor, Computer Science	
Habib University, Pakistan	2012–2025
– Affiliated Associate Professor, Computer Science	2025–
– Curriculum Review Lead & Faculty Recruitment Advisor	2021–2022
– Assistant Dean, Dhanani School of Science and Engineering	2020–2021
– Associate Professor, Computer Science	2019–2025
– Program Director, Computer Science	2015–2018
– Assistant Professor, Computer Science	2012–2019
Pitzer College, USA	2019
– Visiting Assistant Professor, Mathematics. Spring 2019	
Texas A&M University, USA	2013
– Lecturer, Computer Science. Fall 2013	
Fast NUCES, Karachi, Pakistan	2011–2012
– Assistant Professor, Computer Science	
Friedrich Schiller Universität Jena, Germany	2008–2011
– Research Scientist	
Institute of Applied Maths and Information Technology, Italy	2007
– Visiting Researcher, May–Jun	
Max Planck Institut (MPI) Informatik / Saarland University, Germany	2003–2007
– Research Member, AIM@SHAPE, EU FP6 project IST NoE 506766	2005–2007
– Teaching Assistant	2003–2004
University of Karachi, Pakistan	2001
– Teaching Assistant	
Mohammad Ali Jinnah University, Pakistan	2000–2002
– Teaching Assistant	

Training in Pedagogy and Academic Leadership

Conducted/Participated

- Panel on **Future of Teaching and Learning**, Center for Pedagogical Excellence, Habib University. August 2024.
- Panel on **Navigating Student Advising for Student Success**, Center for Pedagogical Excellence, Habib University. August 2024.
- Workshop on **Designing Student Centered Learning Experiences**, Center for Pedagogical Excellence, Habib University. August 2023, August 2022, August 2019 (online), August 2018.
- Session on **It Worked for Me: Buddy System**, Center for Pedagogical Excellence, Habib University. September 2022.
- Session on **Mapping Courses to PLOs**, Curriculum Review Workshop, Habib University. May 2022.
- Panel on **AI Frontiers: A Student and Faculty Perspective**, Center for Pedagogical Excellence, Habib University. March 2022.
- **Tuning Protocol** session at Center for Pedagogical Excellence, Habib University. February 2017.

Attended

- Webinar on **Harnessing Gen AI in the Undergraduate Classroom**, Mike Roberto, Harvard Business Publishing Education, October 2024.
- Webinar on **ChatGPT Strategies You Can Implement Today to Enhance Your Class Sessions**, Dan Levy, Harvard Business Publishing Education, September 2024.
- Sessions on **SoTL for Arts, Sciences, and Humanities; Generative AI in Teaching and Learning: Prompt Engineering and Digital Equity; Critical Response Process (CRP): A Method of Giving and Receiving Feedback**, Center for Pedagogical Excellence, Habib University. August 2024.
- Webinar on **Intertwined Futures: AI, Higher Education**, Ajit Jaokar, Chee Leong LIM, and Asma Salman; part of online course on, “AI across campus”, Forman Christian College University, May 2024.
- Webinar on **Implementing AI on Campus**, Hoda Mostafa, part of online course on, “AI across campus”, Forman Christian College University, May 2024.
- Webinar on **Leveraging AI for Teaching and Learning**, Edd Pitt, part of online course on, “AI across campus”, Forman Christian College University, May 2024.
- Sessions on **AI in Education: A primer; Writing Formal Proofs Using CoQ; Grading Alternatives; Ensuring Equitable Course Experience for First Year Students**, Center for Pedagogical Excellence, Habib University. August 2023.
- Webinar on **LLMs: A New Way to Teach Programming**, Daniel Zingaro and Leo Porter, ACM Tech Talk, June 2023.
- Workshop on **Improv Theater Training**, Center for Pedagogical Excellence, Habib University. May 2023, May 2022.
- Session on **It Worked for Me: Students as Teachers**, Center for Pedagogical Excellence, Habib University. October 2022.
- Sessions on **Sensitivity Training; From Advisor to Mentor**, Center for Pedagogical Excellence, Habib University. August 2022.
- Workshop on **Instructional Design: BOPPPS**, Center for Pedagogical Excellence, Habib University. June 2022.
- Several sessions of **Tuning Protocol**, Center for Pedagogical Excellence, Habib University. 2016–2022.
- Workshops on **Stress Repress; Rethinking Teaching Statements; How Might We Make a Zoom Class Feel Like a Dinner Party with Friends?; Scholarship of Teaching and Learning (SoTL); Community Building in Your Classroom; Rubric Design for Assessments in Canvas**,

Center for Pedagogical Excellence, Habib University. August 2021 (online).

- Session on **Ditching the Traditional College Lecture in Remote Instruction**, Virtual Conference on Effective Remote Instruction, IEEE Education Society. July 2020 (Online).
- Session on **Adapting to Change and Keeping Families Healthy**, Rozina Karmaliani (Aga Khan University), Habib University. June 2020 (online).
- Workshop on **Cocreating norms for online university experience**, by Drawn to Lead, Center for Pedagogical Excellence, Habib University. June 2020 (online).
- Workshop on **Springing into Online Pedagogy**, by Drawn to Lead, Center for Pedagogical Excellence, Habib University. June 2020 (online).
- Workshop on **Syllabus Design**, Habib University. August 2019.
- Workshop on **Leveraging Psychology to Create Compelling Learning Experiences**, Teaching and Learning Center, Pomona College. February 2019.
- Workshop on **Reflective Teaching Practices** by Glen Van Brummelen (Quest University), Center for Pedagogical Excellence, Habib University. August 2018.
- Workshop on **Designing Student Centered Learning Experiences**, Summer Collaboratory, Olin College. June 2018.
- Session on **Active Learning and Flipped Classroom** by Saquib Razzak (CMU Qatar), Habib University. March 2018.
- Workshop on **Curriculum Design with Design Thinking** by John Armstrong (D-School), Habib University. March 2018.
- Workshop on **Entrepreneurship Curriculum Development** by Sydney Gray (Propeller) at US Consulate Karachi, Pakistan. October 2017.
- Workshop on **The Liberal Arts in Higher Education**, by South Asia Institute, Harvard University in Dubai, UAE. August 2017.
- Conference on **Leadership in Higher Education**, Atlanta, USA. October 2016.
- Session on **Active Learning**, by Rachel Levy (Harvey Mudd College), Habib University. April 2016.
- Workshop on **Effective Teaching** by Qaisar Sultana (Eastern Kentucky University), Habib University. January 2016, March 2015.
- Workshop on **Introduction to Design Thinking** by Sarah Stein Greenberg and Erik Olesund (D-School), Habib University. December 2015.
- **Wakonse South Conference on College Teaching**, Canyon of the Eagles, USA. April 2013.
- Seminars, workshops, and panels on **Teaching Difficult Topics; Reflecting on Student Learning; Mentoring Graduate Students; Reflecting on Your Teaching as a Means to Improve Instruction; High-Impact Practices: Building synergies into your Teaching; Peer Review of Teaching; Teaching as Research**, Center for Teaching Excellence, Texas A&M University, USA. March-December 2013.
- Workshop on **Technology Entrepreneurship**, IBA Karachi, Pakistan. March 2013.
- Seminars on **Toolbox for Teaching; Fit for Teaching: Basics in Teaching in Higher Education**, Graduate Academy, Friedrich Schiller Universität (FSU) Jena, Germany. May, July 2010.

Teaching

- **Pitzer College, USA.** 2019
CSCI 056 Object Oriented Game Design; CSCI 155 Computer Graphics
- **Habib University, Pakistan.** 2014–2025
CORE 111 Logical Problem Solving; PLAY 113 Design your Habib Experience; CS 100 Computer Science Freshman Seminar; CS 101 Programming Fundamentals; CS 110 & CS 111 Computational Thinking I & II; CS/MATH 113 Discrete Mathematics; CS 130/EE 172 Digital Logic and Design; CS 232 Elements of Computing Systems; CS 200 Data Structures II; CS 201 Functional Data Structures; CS 212 Nature

of Computation; CS 224 Object Oriented Programming and Design Methodologies; CS 334 Competitive Programming; CS 400 Computer Science Senior Seminar; CS 412 Algorithms: Design and Analysis; CS 440 Computer Graphics

• **Texas A&M University**, USA. 2013

CSCE 443/VIST 487 Game Development

• **FAST NUCES**, Pakistan. 2011–2012

CS 102 Introduction to Computer Science; CS 301 Theory of Automata; CS 418 Computer Graphics; CS 422 Human Computer Interaction

• **Friedrich Schiller Universität Jena**, Germany. 2008–2011

GPGPU with CUDA; Information Visualization Seminar; Shape Retrieval Seminar

• **Saarland University**, Germany. 2003–2004

TA for: Computer Architecture II; Computer Graphics

• **University of Karachi**, Pakistan. 2001

TA for: Automata Theory

• **Mohammad Ali Jinnah University**, Pakistan. 2000–2002

TA for: Structured Programming; Calculus 2; Discrete Mathematics; Automata Theory; Digital Computer Logic; Electronics; Computer Architecture

Service

• ICPC Coach, Habib University. (1st position in ICPC Asia West, 2025. 2nd, 7th, 6th, 7th, and 2nd positions in Regional Finals 2024, 2023, 2022, 2021, and 2020 respectively)

• Organizing Committee member, PyCon Pakistan 2019 and PyCon Pakistan 2017.

• Invited member of CS board of studies at: Institute of Business Administration Karachi, Karachi School of Business Leadership, and Usman Institute of Technology University.

• External reviewer/evaluator for various academic events at MAJU Karachi, FAST NUCES Karachi, PAF KIET Karachi, DHA Suffa Karachi, and Sukkur IBA.

• At Habib University: Faculty Senate member and chair; NECHE accreditation subcommittee member; founding director of Women in Computer Science and Engineering (WiCSE); reviewer for internal research grants and teaching excellence awards; master of ceremony at various public events including all convocations; faculty patron of Brain.Hack() CS club (ACM student chapter); interviewer for student admissions, learn abroad, and research abroad programs; supervised capstone projects; served in various university and program committees; participated in recruitment drives aimed at schools and parents; got filmed for various promotional videos.

• At FAST NUCES Karachi: Faculty Hiring Committee, Graduate Studies Committee, Faculty Head of flagship event ProCom 2012

• At Friedrich Schiller Universität Jena: Faculty Hiring Committee

• Reviewer for: Computer Aided Geometric Design, Computer Graphics Forum, Journal of Virtual Reality and Broadcasting (JVRB), Computer & Graphics, SIGCSE 2024, SIGCSE 2020, Eurographics 2014, Signal Image and Video Processing (SIVP), ICICT 2013, Pacific Graphics 2013, SIGGRAPH 2008, VMV 2007, 3DPVT 2006, Eurographics 2005.

Publications

- **W. Saleem**, A. Belyaev, D. Wang, and H.-P. Seidel, *On Visual Complexity of 3D Shapes*, Computers & Graphics, 35(3), pp. 580–585. June 2011. *Proceedings of Shape Modeling International (SMI), 2011*. [pdf]
- R.C. Veltkamp, G.J. Giezeman, H. Bast, T. Baumbach, T. Furuya, J. Giesen, A. Godil, Z. Lian, R. Ohbuchi and **W. Saleem**, *SHREC'10 Track: Large Scale Retrieval*. Proceedings of the Eurographics/ACM SIGGRAPH Symposium on 3D Object Retrieval (SHREC) 2010, pp. 63–69. [pdf]
- S. Garg, J. Nam, K. Padalkar, K. Mueller, M.-Y. Chan, H. Qu, S. Laue, **W. Saleem**, and J. Giesen, *KAV-DB: Towards a Framework for the Capture and Retrieval of Visualization Knowledge over the Web*, Proceedings of the Schloss Dagstuhl Scientific Visualization Workshop, 2009. [pdf]
- D. Wang, A. Belyaev, **W. Saleem**, and H.-P. Seidel, *Shape Complexity from Image Similarity*, Technical Report MPI-I-2008-4-002, MPI Informatik. [pdf]
- **W. Saleem**, O. Schall, G. Patanè, A. Belyaev, and H.-P. Seidel, *On Stochastic Methods for Surface Reconstruction*, The Visual Computer, 23(6), pp. 381–395. June 2007. *AIM@SHAPE Best Paper Award, 2006*. [pdf]
- **W. Saleem**, D. Wang, A. Belyaev, and H.-P. Seidel, *Automatic 2D Shape Orientation by Example*, Proceedings of the IEEE International Conference on Shape Modeling and Applications (SMI) 2007, pp. 221–225. [pdf]
- **W. Saleem**, W. Song, A. Belyaev, and H.-P. Seidel, *On Computing Best Fly*, Proceedings of the 23rd Spring Conference on Computer Graphics (SCCG) 2007, pp. 143–149. [pdf]
- E. Danovaro, L. Papaleo, D. Sobrero, M. Attene, and **W. Saleem**, *Advanced Remote Inspection and Download of 3D Shapes*, Proceedings of the 12th International Conference on 3D Web Technology (Web3D) 2007, pp. 57–60. [pdf]
- H. Yamauchi, **W. Saleem**, S. Yoshizawa, Z. Karni, A. Belyaev, and H.-P. Seidel, *Towards Stable and Salient Multi-View Representation of 3D Shapes*, Proceedings of the IEEE International Conference on Shape Modeling and Applications (SMI) 2006, pp. 265–270. [pdf]
- **W. Saleem**, D. Wang, A. Belyaev, and H.-P. Seidel, *Statistical Learning for Shape Applications*, Workshop on Shapes and Semantics, 2006. [pdf]
- F. Isgró, F. Odono, **W. Saleem**, O. Schall, *Clustering for Surface Reconstruction*, Proceedings of the 1st International Workshop on Semantic Virtual Environments (SVE), 2005, pp. 156–162. [pdf]

Student Publications

- M. Shafique, A. F. Fazli, L. Qureshi and **W. Saleem**, *Adaptive Learning for Standardised Test Preparation*, 2023 25th International Multitopic Conference (INMIC), Lahore, Pakistan, 2023, pp. 1–8. [author interview] [paper]
- A. Khan, M. Haris, S. S. Nadeem, S. Batool, B. Memon and **W. Saleem**, *Virtual Self Defense Trainer – Analyzing and Scoring User Pose*, 2020 International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA), Ankara, Turkey, 2020, pp. 1–5. [paper]

Theses

PhD : *Digital Processing and Management Tools for 2D and 3D Shape Repositories*. Max Planck Institut für Informatik and University of Saarland. June, 2010. [pdf]

MS : *A flexible framework for learning-based surface reconstruction*. Max Planck Institut für Informatik and University of Saarland. December, 2004. [pdf]

Other

- *A Culture of Excellence in the Advancement of Knowledge*, Dawn Supplement on German National Day, October 2020.
- *Studying in Germany*, Dawn Supplement on German National Day, October 2016.
- *A Trip to TAMU*, Hum Khayal Vol. 1. Issue 4, Habib University, Summer 2015.

Speaking, Moderation, and Training

- Conducted a day-long training on Competitive Programming for **Digital Pakistan Speed Programming Competition** (codePK), by Ignite, Ministry of IT and Telecom, held at Habib University. June 2025.
- Participated in a workshop on **Day Zero Employability of Technical Graduates**, by Ministry of IT and Pakistan Software Export Board, held at IBA Karachi. January 2025.
- **Getting into Competitive Programming**, ACM Chapter, Habib University. September 2024.
- Participated in **Roundtable discussion on Teaching Programming Skills**, National Computing Education Accreditation Council. June 2024.
- **Advent-ures of Code**, PyCon Pakistan. March 2024. [video]
- **R3 Faculty Talk** on winning the Teaching Excellence Award, Habib University. Jan 2023. [video]
- **Color does not exist**, CORE 101, Habib University. November 2022.
- **Academic Integrity**, First Year Fundamentals, Habib University. September 2022.
- Panelist on **Metaverse**, MAJICC, MAJU Karachi. October 2022.
- Moderated a panel on **Future of Education and the Role Games Play**, Game X Conference. November 2021. [video]
- Created and co-hosted a podcast series, **Beyond the Syllabus**, Runway Radio. 2021. [link]
- Participated in **P@SHA: Skilled HR Development Roundtable**, Pakistan IT Industry Association (P@SHA). October 2021.
- **The Complexity of a Shape**, CS 100 First Year Seminar, Habib University. September 2021, 2020, 2019.
- Participated in **Working Together: National ICT Education Roundtable**, National Incubation Center Karachi. February 2020.
- **F-strings and Assignment Expression**, PyCon Pakistan. October 2019. [video]
- **Python as the First Language**, PyCon Pakistan. December 2017. [teaser]
- Led the **CS Track** at National STEM School, LUMS, Pakistan. December 2016 & 17.
- **Functional Data Structures**, ProCom Pakistan. April 2017.
- **Higher Education in Germany**, Academic Day, Consul General of the Federal Republic of Germany, Pakistan. October 2016.
- **The Geometry of 3D Games**, Ilma University (formerly Biztek), Pakistan. June 2016.
- **3D Geometry**, ICICT, IBA Karachi, Pakistan, December 2015.
- **From NAND to Tetris: A Holistic View of Computing**, ProCom Pakistan. April 2015.
- **3D Geometry: Opening the door to Virtual Worlds**, Habib University, Pakistan. October 2014. [album]
- **Similarity Based Retrieval of Multimedia Content**, PAF KIET, Pakistan. April 2014.
- **Topics in Game Programming**, ProCom, Pakistan. April 2014.
- **From Bits to 3D Meshes**, Greenwich University, Pakistan, March 2013.
- **Similarity Based Retrieval of Multimedia Content**, FAST NUCES Karachi, Pakistan. November 2012.
- Workshop: **General Purpose Computing on Graphics Processing Units**, International Conference on Information and Communication Technology (ICICT), IBA Karachi, Pakistan. July 2011.
- **Geometric Models of Real World Objects** at.
 - Punjab University College of Information Technology (PUCIT), Lahore, Pakistan July 2011.
 - Institute of Business Management (IoBM), Karachi, Pakistan. June 2011.
- **Massive Scale Programming with GPUs**, Friedrich Schiller Universität Jena, Germany. February 2011
- **GPGPU with CUDA**, at Workshop on Analysis & Management of Complex Systems, Friedrich Schiller Universität Jena, Germany. March 2010
- **Digital Shape Analysis**, Friedrich Schiller Universität Jena, Germany. November 2008

- **AIM@SHAPE Shape Repository**

- 6th Int. Congress on Industrial and Applied Mathematics (ICIAM), Zurich, Switzerland. July 2007
- Industry Challenges in Geometric Modeling, CAD & Simulation, Darmstadt, Germany. March 2007
- EU IST Event, Helsinki, Finland. November 2006
- AIM@SHAPE Summer School: Applications of 3D Shapes, Tallinn, Estonia. July 2006

- **2D Views of 3D Shapes**

- CNR-IMATI, Genova, Italy. May 2007
- DISI, University of Genova, Genova, Italy . May 2007
- 1st International Workshop on Shapes and Semantics, Matsushima, Japan. June 2006
- Communicating European Research (CER), Brussels, Belgium. November 2005

- **Statistical Learning for Shape Applications**, First International Workshop on Shapes and Semantics, Matsushima, Japan. June 2006

Awards, Honors, Certifications, Memberships

- ICPC Best Coach Award, 2024-25
- CITI Certification: Responsible Conduct of Research for Administrators
- ACM Professional Member
- Distinguished Award in Teaching for a DSSE course, 2022
- AIM@SHAPE Best Paper Award, 2006
- 3rd Place, IMPRS PhD Poster Competition, 2005
- IMPRS Fellowship for MS studies at Saarland University, 2002-2004
- Chancellors list at Mohammad Ali Jinnah University (MAJU), 1999-2002

Languages and Frameworks

Natural: Urdu (native), English (fluent), German (advanced)

Computer: Python, C/++, WebGL, OpenGL, Haskell, L^AT_EX

Hobbies and Interests

- I spend my free time reading technical articles, making programming projects, and improving my programming knowhow.
- I am constantly gathering ideas to develop interesting learning experiences for my students.
- I enjoy the fantasy and science fiction genres in print and in visual media.
- I like to counter the effects of time on my body through light exercise.
- Functional programming especially appeals to me and I am exploring ways to develop rigorous, intellectually rewarding experiences around it for my students.
- Competitive programming is a fun way to bring together problem solving, algorithms, and computer programming. I developed a course on it and am working on my Codeforces rating.
- I have recently taken up composting, inspired in part by an alumna's eco-startup.