

Aleem Akhtar Asif

B-21A-13 CITI Society, Jhelum, Pakistan

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RESEARCH INTERESTS

Technology-Enhanced Learning, Adaptive Learning Technologies, STEM Education

EDUCATION

MS in Computer Science, GPA: 3.96/4.0

Sep 2019-Nov 2024

Virtual University of Pakistan

*Bachelor of Information and Communication System Engineering, Sept 2009-June 2013
GPA: 3.49/4.0*

National University of Sciences and Technology, Islamabad, Pakistan

EXPERIENCE

Lecturer in Computer Science

April 2018 – Present

Govt. Graduate College G.T. Road, Jhelum

Affiliated with University of Gujrat

- Taught BS-level university courses including: **Computational Physics, Statistical Computing, Research Methodology, Applications of ICT, and Entrepreneurship.**
- Delivered core computer science modules: **Programming Fundamentals, Network Security, Web Engineering, and Object-Oriented Programming.**
- Designed and evaluated assignments, lab tasks, and assessments aligned with University of Gujrat BS-CS/IT curriculum.
- Mentored students academically and participated in advising, invigilation, and departmental responsibilities including student discipline.

Lecturer in Computer Science

October 2014 – April 2018

Punjab College of Science and Commerce, Pind Dadan Khan

Affiliated with University of Central Punjab

- Instructed Associate Degree and Intermediate students in **E-Commerce, Computing Fundamentals, Introduction to Computers, and Programming.**
- Focused on conceptual clarity and exam preparation techniques for university and board-level exams.
- Managed labs and delivered hands-on sessions using modern computing tools.

Research Assistant

December 2013 – September 2014

School of Electrical Engineering and Computer Science (SEECS), NUST

- Contributed to the ICT R&D-funded project **MPJ Express 2.0**, focused on building a parallel Java computing environment.
- Designed and implemented debugging and profiling tools for parallel Java programs.
- Co-authored project documentation and helped in project performance evaluation.

Teaching Assistant

2011 – 2013

SEECS – National University of Sciences and Technology (NUST)

- **Spring 2013:** Data Structures and Algorithms, Object Oriented Programming
- **Fall 2012:** Fundamentals of ICT, Transmission Lines and Waveguides
- **Spring 2012:** Operating Systems, Fundamentals of Computer Programming, Applied Physics
- **Fall 2011:** Fundamentals of Computer Programming, Object Oriented Programming
- Assisted with labs, graded coursework, and conducted tutorials to support conceptual learning and programming practice.

PUBLICATIONS	• Akhtar, A. (2019). Evolution of Ant Colony Optimization Algorithm – A Brief Literature Review. <i>arXiv preprint arXiv:1908.08007</i> [A]. • Shafi, A., Akhtar, A., Javed, A., Carpenter, B. (2014, November). Teaching parallel programming using Java. In <i>2014 Workshop on Education for High Performance Computing</i> (pp. 56–63). IEEE [A]. • Akhtar, A. (2023). Popularity ranking of database management systems. <i>arXiv preprint arXiv:2301.00847</i> [A]. • Akhtar, A. (2020). Role of Apache Software Foundation in big data projects. <i>arXiv preprint arXiv:2005.02829</i> [A]. • Akhtar, A. (2020). Implementation of course recommender system for Virtual University of Pakistan. <i>arXiv preprint arXiv:2008.07867</i> [A]. • Akhtar, A., Shafi, A., Jameel, M. (2014). Design and Implementation of Parallel Debugger and Profiler for MPJ Express. <i>arXiv preprint arXiv:1408.6347</i> [A].
LANGUAGE PROFICIENCY	• PTE Academic: Score 87/90 (equivalent to IELTS 8.5, CEFR C2) – Writing 90, Speaking 89, Reading 84, Listening 80
PROJECTS	• MS Thesis – CLEARN: A Cross-Platform Application to Assist Intermediate Students in Learning C Language Using Flutter SDK Developed a cross-platform mobile application to support C programming learning for Intermediate students without requiring internet access. The project evaluated educational impact using a split-group experiment. – Designed and implemented the app using Flutter SDK with platform support for Desktop, Mobile, and Web. – Conducted a user-centered evaluation with student groups to assess performance improvements. – Addressed accessibility by enabling offline usage and localized content delivery. • Research Projects – SEECS, NUST (MPJ Express) Contributed to four major research sub-projects under the ICT R&D Funded MPJ Express 2.0 initiative, focused on scalable, parallel computing using Java for HPC education and application. – <i>Development of Optimized Collective Primitives for MPJ Express:</i> Implemented efficient collective communication operations to improve parallel performance. – <i>Development of Enhanced Runtime System for MPJ Express:</i> Engineered a lightweight, flexible runtime environment for execution across heterogeneous systems. – <i>MPJProf v1.0.0 and MPJ Express Software v0.41:</i> Built a performance profiling tool enabling visualization of message-passing overhead and thread behavior. – <i>MPJDebug v1.0.0 and MPJ Express Software v0.40:</i> Designed and integrated a parallel debugger for Java MPI applications, supporting step-through execution and breakpoints.
SKILLS	<i>Programming:</i> C, C++, Python, MATLAB, Java, Dart, PHP, JavaScript <i>Development & Version Control:</i> VS Code, Git, GitHub, Postman, CI/CD <i>Scientific Writing & Document Tools:</i> LaTeX, Overleaf, Jupyter Mendeley <i>Databases:</i> MySQL, MS SQL Server, Firebase, MongoDB <i>Environment:</i> Linux Shell, Windows, Android Studio, RStudio, GitHub Actions
AWARDS AND HONORS	• Awarded ICT R&D Full Scholarship for four years during undergraduate studies at NUST. • Secured 1st Position in Speed Programming at <i>TeqtIQs 2011 and 2012</i>, held at Iqra University. • Achieved 3rd Position in CodingGURU 2010 at NUST.

- Secured **5th Position** in APATHON 2012 (WP7 competition) held at COMSATS.
- Received **Semester GPA Scholarship** in 2nd, 3rd, 4th, and 5th semesters at NUST.
- Selected as **Best Semester Project** in “Digital Signal Processing” course.