

# Saleem Khan

## Senior Software Engineer

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Experienced software engineer and researcher with over 20 years of industry experience in software engineering, behavioural data systems, and speech recognition/synthesis. Combining deep expertise in signal processing with an AI Practitioner Certification, I have developed audience measurement systems and authored multiple publications. Research interests lie at the intersection of software engineering, privacy-preserving data collection, behavioural analytics, and socially responsible computing.

### Research Interest

- Privacy-Preserving Data Collection Systems
- Behavioural & Audience Measurement
- Speech Recognition & Synthesis

### Education

- **AWS Certified AI Practitioner** Certified 2026.
- **AI Programming with Python** (A Nanodegree Program) RMIT Online 2025.
- **Master of Computer Application (MCA)** Dr. A.P.J. Abdul Kalam Technical University (Formerly Uttar Pradesh Technical University), Lucknow, India 2003. Assessed by Australian Computer Society (ACS) as comparable to an AQF Master Degree with a major in Computing.
- **Doctoral Studies** (Ph.D. Admitted) Jamia Millia Islamia (A Central University), New Delhi, India | Jan 2004.
  - Conducted doctoral-level research in Speech Recognition alongside Council of Scientific Industrial Research (CSIR) funded project Spoon Feeding Robot at CEERI.
  - Program discontinued due to unavoidable family circumstances.

### Professional Experience

#### Senior Software Engineer | Comscore, Inc (Australia) | Mar 2022 – Jun 2025

- **System Architecture:** Designed, implemented, and maintained ResearchSecure, a Windows-based behavioural analytics application, ensuring robust measurement data collection.
- **Extension Development:** Architected cross-platform browser extensions (Chrome/Edge) using JavaScript and WebAssembly to execute complex data processing logic on the client side.
- **Documentation:** Established comprehensive design flows and architectural documentation using Confluence and iShare to support team knowledge transfer.
- **Key Achievements:**
  - Delivered secure and optimized data collection capabilities for large-scale research panels.
  - Optimized legacy C++ Windows services, reducing CPU and memory footprint to ensure invisible background operation on millions of consumer devices.

#### Technical Architect | Tata Consultancy Services (Australia & NZ) | Sept 2015 – Mar 2022

- **Product Development:** Designed and developed the Netsight Chromebook Meter from scratch, a critical component of Nielsen's audience measurement platform.
- **Agile Leadership:** Actively participated in Agile ceremonies, including sprint planning, daily stand-ups, and backlog grooming to drive project deliveries and maintain velocity.
- **Key Achievements:**
  - Successfully expanded Nielsen's measurement capabilities across new device types through the Chromebook initiative.
  - Enhanced the accuracy and reliability of digital panel coverage.
  - Awarded the Innovation Pride Award (Dec 2020) for the development of the Netsight Chromebook Meter.

#### Senior Software Engineer | Tata Consultancy Services (India) | May 2007 – Aug 2015

- **Financial Systems:** Developed and maintained the Order Router, a high-stakes equity trading system for Morgan Stanley.
- **Application Maintenance:** Managed the Netsight application and designed a Chrome browser extension specifically for Video-On-Demand (VOD) video measurements.
- **Key Achievements:**
  - Provided developmental support to the Netsight Meter, the core audience measurement application.
  - Improved the stability and scalability of the Equity Trading System (ETS) platform to handle increased transaction loads.

## Research Experience

### Software Engineer | Prologix Software Solutions | Jun 2005 – Apr 2007

- Conducted research on Harmonic plus Noise Model (HNM)-based speech synthesis prototype using MATLAB.
- Researched and developed 'Vaachak', a cross-platform Hindi & English text-to-speech (TTS) engine.
- Successfully transitioned the Harmonic plus Noise Model (HNM) prototype from MATLAB into a full production-grade C++ implementation.
- The 'Vaachak' was awarded 2005 Manthan Award for e-Inclusion.
- Recipient of National Award for the Empowerment of Persons with Disabilities by President of India Dr APJ Abdul Kalam.
- The technology was subsequently acquired by Nuance/Microsoft.

### Research Scholar | Central Electronics Engineering Research Institute (CEERI) Delhi Centre | Aug 2003 – Mar 2005

- Conducted research on Hidden Markov Model (HMM)-based speech recognition systems for assistive technologies.
- Focused on LPC, DTW, and acoustic feature optimization for isolated word recognition.
- Research contributed to systems aimed at supporting people with physically disabilities, including the Spoon Feeding Robot Project.

## Publications

- Saleem M, Shaghaf M. Ansari, Safdar Tanweer, "Saving of computational time and rejection of non-vocabulary word in DTW and LPC based spoken word recognizer", Journal of Acoustical Society of India, Proceeding of National Symposium on Acoustic (2010), Vol. 37 Number 1, pp. 105-111, ISSN 0973-3302, Rishikesh, India, 2010.
- Saleem M, Mobin Abdul, Mustafa K, Ahmad Imran, "Spoken word recognition of German digits uttered by native and non-native speakers", International Conference on Information Technology, Al-Zaytoonah University, Jordan, May 2005.
- Saleem M, Mustafa K, RA Khan, Agrawal Pratibha, "Effect of Regional Variants on Isolated Word Recognition in India", Proc. National Conference on Recent Advances & Future Trends in IT (RAFIT'05), pp. 55-57, Patiala, March 2005.
- Saleem M, Mobin Abdul, Mustafa K, "Optimization of input parameters for estimation of LP coefficients for isolated word recognition", Proc. International Conference on Systemic, Cybernetics and Informatics (ICSCI-2005), pp. 390-393, Hyderabad, Jan 2005.
- Saleem M, "Challenges in Automatic Speech Recognition", DeveloperIQ, Vol. 4, No. 12, pp. 57-62, Dec. 2004.

## Core Skills

- **Programming Languages:** C++, Python, WebAssembly, JavaScript, SQL.
- **Frameworks & Libraries:** Boost, JSON, STL, Windows Services, Windows Applications.
- **Cloud & DevOps:** AWS AI Services including S3, Lambda, Route53, Git, GitHub, Bitbucket.
- **Tools & Methodologies:** Visual Studio, VS Code, JIRA, Confluence, iShare, Object Oriented Programming, Scrum and Agile.
- **Key Domains:** Audience Measurement, Behavioural Data Collection, Browser Extensions and Speech Technologies.
- **Research Tools:** Matlab, CoolEdit and Praat.

## Awards

- **Innovation Pride Award by Tata Consultancy Services (Dec 2020)** – Individual Innovation Award for the innovative architecture of the Chromebook Meter, enabling critical audience measurement capabilities on Chrome OS platforms.
- **Vaachak Team Awards (2005)** – Key contributor to 'Vaachak', a cross-platform Hindi & English Text-to-Speech (TTS) engine that received the National Award for the Empowerment of Persons with Disabilities, presented by Dr A.P.J. Abdul Kalam, President of India. The project was also honored with the Manthan Award (2005) for excellence in digital accessibility and empowerment.

## References

Available upon request.