SANDHYA MUTHUKUMAR ARCOT

(647) 355-9336 | sandhya.arcot@gmail.com | LinkedIn: https://in.linkedin.com/in/sandhya-arcot-363762131

# SUMMARY OF QUALIFICATIONS

• 15+ years of software engineering experience with deep expertise in the .NET ecosystem (Framework 4.8, .NET Core/.NET 6, .NET Minimal APIs, ASP.NET Core, WPF, Entity Framework, EF Core, .NET MAUI).

• Proven track record of breaking down monolithic architectures into modular, microservices-based systems, enabling scalability and performance improvements.

• Skilled in modern architecture patterns (MVVM, dependency injection, clean architecture, asynchronous programming, multithreading) and performance analysis using industry tools.

• AI-assisted software development leader: adopted GitHub Copilot (based on OpenAI Codex/GPT models) to optimize developer workflows, cutting algorithm implementation time by ~50% while maintaining accuracy. Mentored engineers on best practices for leveraging AI code assistants in enterprise projects.

• Recognized technical leader and Staff Engineer with experience in mentoring, architecture decisions, and guiding teams toward adoption of cloud, microservices, and modern coding practices.

• Certified by Microsoft in .NET Framework Architecture, WPF, and C# programming.

# AREAS OF EXPERTISE

* Languages & Frameworks: C#, .NET 6, .NET Framework 4.8, WPF, MVVM, LINQ, XAML
* UI/UX: XAML Styling, Custom Controls, Telerik UI, DevExpress, User-Centered Design
* Database & Persistence: SQL Server, SQLite, Entity Framework Core, ADO.NET, Repository Pattern
* Tooling & DevOps: GitHub, GitHub Copilot, Azure DevOps, Docker, CI/CD Pipelines
* Testing & Quality: NUnit, Integration Testing, Performance Profiling, Debugging Multithreaded Code
* Specialized Domains: Imaging Algorithms, DICOM, Mass Cytometry (CyTOF®), AI-Assisted Development

# WORK EXPERIENCE

## Senior Software Developer → Staff Engineer | Standard Bio Tools

June 2018 – Present

Mass cytometry by time-of-flight, used in CyTOF® systems, empowers researchers to interrogate 50+ markers simultaneously on millions of individual cells, unveiling new cell types, functions, and biomarkers in immunology, cancer, and stem cells.

* **Staff Engineer (Jan 2024 – Present)**

•Led modernization initiatives by breaking down monolithic application modules into isolated services, enabling better scalability and maintainability.

• Introduced .NET Minimal APIs to create lightweight RESTful services, decoupling performance-heavy workflows from the WPF client.

• Leveraged Entity Framework Core with service-specific databases, improving data ownership and aligning with microservices best practices.

• Advocated for domain-driven design and clean architecture patterns to simplify onboarding and reduce technical debt.

• Partnered with DevOps to containerize new services with Docker and integrate automated builds and deployments into CI/CD pipelines.

• Adopted GitHub Copilot within Visual Studio, using its AI-powered code completion (based on OpenAI Codex models, descendants of GPT-3) to accelerate development of complex algorithms.

• Optimized workflows for traversing and ablating complex polygon shapes in imaging mass cytometry instruments, cutting development time by nearly 50% while ensuring accuracy and performance.

• Mentored teams on API-first development, service contracts, and testing strategies (NUnit, integration testing).

* **Senior Software Developer (June 2018 – Dec 2023)**

• Migrated legacy WinForms systems to WPF using MVVM and MEF, improving scalability and maintainability.

• Built custom Windows OS–integrated notification service (Toast notifications).

• Resolved critical stability and concurrency issues in multithreaded applications.

• Developed and maintained application databases with Entity Framework.

## Applications Consultant | Siemens Healthcare Pvt Ltd, India

Jun 2011 – Jan 2018

* Served as Technical Lead, overseeing module design and implementation for complex diagnostic imaging systems using C#, WPF, and MVVM.
* Designed scalable desktop applications on the .NET Framework, delivering performant, reliable, and user-friendly imaging tools.
* Authored detailed design and architecture documents, facilitating collaboration between development, QA, and product teams.
* Created high-level and detailed UML diagrams in Enterprise Architect, supporting architecture and design validation for each release.
* Developed modular components using Managed Extensibility Framework (MEF) and other Dependency Injection frameworks, contributing to an internal plugin-based architecture.
* Implemented and optimized multi-threaded workflows, performing performance tuning and memory leak analysis using Windows Performance Toolkit.
* Practiced asynchronous programming patterns in C#, enhancing responsiveness in imaging modules.
* Automated test cases with C# on Siemens’ internal testing platform, improving validation consistency across releases.
* Collaborated with global teams across Germany and India to synchronize design and development efforts in agile sprints.
* Contributed to project planning and delivery as Assistant Scrum Master, managing sprint backlogs, conducting retrospectives, and ensuring timely release goals.
* Built Proof of Concepts (POCs) during project initiation to mitigate technical risks and validate new approaches.
* Participated in high-level estimations, requirement analysis, and scope definitions during early project phases to ensure realistic delivery planning.

## Senior Software Engineer | Tata Consultancy Services Pvt Ltd, India

Oct 2008 – Jun 2011

• Built MVVM-based architecture for WPF/WCF applications supporting insurance operations.

• Designed dynamic, reusable UI components (tree views, themes) in XAML.

• Collaborated with analysts and clients to validate usability and requirements.

# EDUCATION & CERTIFICATIONS

Bachelor of Engineering in Biotechnology, BMS College of Engineering (Visvesvaraya Technological University), India — 2008

Microsoft Certifications: .NET Framework Architecture, WPF, Programming in C#