**Principal Software Engineer | Principal Architect  
Builder of Scalable, Secure Cloud-Native Solutions | GitHub Publisher | 2 Patents Awarded**

Hands-on technology leader with extensive experience in software engineering, enterprise architecture, and cloud strategy and solution delivery. Known for delivering complex, high-impact solutions at scale, on time, with clarity, and a strong user-first mindset.

Deep expertise in infrastructure as code, data platforms, and application development (C/C++, Java, C#, Python, PowerShell, Bicep, Terraform). Trusted for clear documentation, visual thinking, and pragmatic leadership.

Awarded two patents for innovation. Published author on GitHub. Industry-spanning experience across High Tech, Financial Services, Telecom, Government, Healthcare, Retail, and Pharma.

At Microsoft: Led 60+ customer engagements across industries, guiding cloud migrations, expansion, and optimization with a focus on simplicity, automation, and repeatable success.

**Solution Lead & Key Contributor to GitHub Repos and Engineering Publication:**

* **WAF-Aligned and Sandbox Solution Deployments**: BICEP (GitHub: [ModernizeCodeSA](https://github.com/microsoft/Modernize-your-code-solution-accelerator/tree/main)).
* **Solution Pattern Lead**: RFP Agent (GitHub: [Agent-for-RFP-Response-SA](https://github.com/microsoft/agent-for-rfp-response-solution-accelerator)).
* **Solution Patten Lead**: Task Management in Sustainability Manager (GitHub: [TaskMgmtSA](https://github.com/microsoft/Task-Management-in-Microsoft-Sustainability-Manager-Solution-Accelerator)).
* **Solution Pattern Lead:** Comparative Analysis for Sustainability (GitHub: [CompAnalysisSA](https://github.com/microsoft/Comparative-Analysis-for-Sustainability-Solution-Accelerator/)).
* **Solution Lead**: Intelligent Field Service Solution Accelerator (Github: [IntelligentFieldServiceSA](https://github.com/microsoft/Intelligent-Field-Service-Solution-Accelerator)).
* **Solution Lead and Key Contributor**: Automate PDF Forms Processing ([AutomatePDF](https://learn.microsoft.com/en-us/azure/architecture/ai-ml/architecture/automate-pdf-forms-processing)).
* **Solution Lead and Key Contributor**: Azure PDF Form Processing Automation Solution Accelerator (GitHub: [AzurePDFAutomationSA](https://github.com/microsoft/Azure-PDF-Form-Processing-Automation-Solution-Accelerator), YouTube: [Azure PDF Proc Automation](https://www.youtube.com/watch?v=2zvoO1jc8CE)).
* **Solution Lead and Key Contributor**: Azure Invoice Process Automation Solution Accelerator (GitHub: [AzureInvoiceProcAutomation](https://github.com/microsoft/Azure-Invoice-Process-Automation-Solution-Accelerator)).
* **Solution Lead and Key Contributor**: Process and Scripts to automate SQL Server to Azure Synapse Migration ([SQL2Synapse Link](https://github.com/microsoft/AzureSynapseScriptsAndAccelerators/tree/main/Migration/SQLServer)) with training videos ([YouTube Link](https://www.youtube.com/playlist?list=PLTPqkIPx9Hx8QJnYh45aewA_60Kw3x1Ia)).
* **Solution Lead and Key Contributor**: Azure Synapse Scripts and Accelerators ([SynapseAccelerators](https://github.com/microsoft/AzureSynapseScriptsAndAccelerators)).
* **Solution Lead and Key Contributor**: APS to Azure Synapse Migration ([APS2SynapseVersion1](https://github.com/microsoft/AzureDWScriptsandUtilities/tree/master/APS%20to%20SQL%20DW%20Migration%20-%20Schema%20and%20Data%20Migration%20with%20PolyBase)) with Python Program ([code here](https://github.com/microsoft/AzureDWScriptsandUtilities/blob/master/APS%20to%20SQL%20DW%20Migration%20-%20Schema%20and%20Data%20Migration%20with%20PolyBase/3_ChangeSchemas/ChangeSchemas.py)) translating APS code to run in Azure Synapse

**CONFERENCES / EVENT SPEAKER / Publications**

* 2025: LinkedIn Article: [A Reusable and Deployable Architecture with .NET C# API App and Azure Services | LinkedIn](https://www.linkedin.com/pulse/reusable-deployable-architecture-net-c-api-app-azure-gail-zhou-phd-71ude/?trackingId=hAyTexx1Q5KplIJA23wFDw%3D%3D) with GitHub Repository: [gailzmicrosoft/SampleDotNetApiApp](https://github.com/gailzmicrosoft/SampleDotNetApiApp).
* 2024: LinkedIn Article: [Information Processing and Coding in the Age of AI | LinkedIn](https://www.linkedin.com/pulse/information-processing-coding-age-ai-gail-zhou-phd-gynne/?trackingId=JMPSYCT6QD2AuL86NRCRGg%3D%3D), with GitHub Repository: [gailzmicrosoft/DocxMarkdownConversions](https://github.com/gailzmicrosoft/DocxMarkdownConversions).
* 2023: Microsoft Customer and Partner Solutions Conference: IoT Telemetry Anomaly Detection in D365 Field Services
* 2022: Microsoft AI/ML Airlift Conference: Azure PDF Processing Automation using AL/ML
* 2021: PASS Summit: SQL Server to Azure Synapse Migration
* 2021: Microsoft GBB Airlift: Business Case Development and Presales Process
* 2021: Microsoft Modern Data Warehousing in the Cloud Digital Event
* 2019: Microsoft Azure Air-Lift Conference Speaker on Azure Synapse Analytics

**EMPLOYMENT HISTORY**

**Microsoft**, Principal Software Engineer / Architect for Azure Infra/App/Data/AI 01/2017-Present

**Career Highlights**: Better Together Award May 2019, Special Award Dec 2021, Promotion to Principal Architect in 2022, Principal Software Engineer since 2024.

* Principal Software Engineer, Commercial Solutions Aeras CTO Engineering, March 2024 – Present
  + Infrastructure and Security lead Engineer: BICEP delivering sandbox and WAF-aligned solution architectures (GitHub Repo: [Modernize Your Code Solution Accelerator](https://github.com/microsoft/Modernize-your-code-solution-accelerator/tree/main)).
  + Pattern Lead: Responsible for leading the engineering delivery for sustainability and Copilot Patterns. Promoting engineering best practices and processes that deliver quality solutions with repeatability with clear documentation. (GitHub Repos: [Agent for RFP Response SA](https://github.com/microsoft/agent-for-rfp-response-solution-accelerator), [Comparative Analysis for Sustainability SA](https://github.com/microsoft/Comparative-Analysis-for-Sustainability-Solution-Accelerator/), and [Task Management for Sustainability Manager SA](https://github.com/microsoft/Task-Management-in-Microsoft-Sustainability-Manager-Solution-Accelerator))
* Principal Architect, Early Access Engineering Innovation Program, Dec 2021- June 2023, **Promotion to Principal Architect** in 2022
  + Led the development and publication of Industrial Metaverse Solutions using Microsoft Dynamics 365 connected services & IoT Technologies. Solution is used to remotely monitor and manage IoT Devices. (Github: [IntelligentFieldServiceSA](https://github.com/microsoft/Intelligent-Field-Service-Solution-Accelerator)).
  + Authored and Published Microsoft Engineering Article: [AutomatePDF](https://learn.microsoft.com/en-us/azure/architecture/ai-ml/architecture/automate-pdf-forms-processing).
* Led the development and publication of “Azure PDF Form Processing Automation Solution Accelerator” GitHub: [AzurePDFAutomationSA](https://github.com/microsoft/Azure-PDF-Form-Processing-Automation-Solution-Accelerator)), (YouTube: [Azure PDF Proc Automation](https://www.youtube.com/watch?v=2zvoO1jc8CE))
  + Led the development and publication of “Azure Invoice Process Automation Solution Accelerator” (GitHub: [AzureInvoiceProcAutomation](https://github.com/microsoft/Azure-Invoice-Process-Automation-Solution-Accelerator)).
* Continued to support previously published solution accelerators, supported services, and created various statement of work (SOWS).
* Lead Architect, Dec 2020 – March 2022, Analytics and AI Accelerate Program, **Special Award** 
  + Advised Customers on target architecture and SMP/MPP/Cloud DW migrations into Azure Synapse Analytics from Teradata, Netezza, Exadata, SQL Server, APS, RedShift, and Google Big Query.
  + Led the development and publication of SQL Server to Azure Synapse Migration Accelerators ([SQL2Synapse](https://github.com/microsoft/AzureSynapseScriptsAndAccelerators/tree/main/Migration/SQLServer/1_TranslateTableDDLs)) and YouTube [Data Migration Channel](https://www.youtube.com/playlist?list=PLTPqkIPx9Hx8QJnYh45aewA_60Kw3x1Ia).
* Architect, Jan 2017 – December 2020, Azure Synapse Customer Success Engineering Program, **Better Together Award** 
  + Led customer engagements with architecture design, prototyping, and production implementations for migrating on-premises SMP/MPP data platforms to Azure Synapse Analytics. 2 customers became public references: Walgreens ([Case Study Link](https://customers.microsoft.com/en-us/story/778746-walgreens-retailers-azure-analytics)) and Neogrid.
  + Guided customers to modernize analytical data architecture with Azure Data Lake, ADF, Azure Databricks, Azure Synapse, Azure Cosmos DB, and Power BI.
  + Led the development and publication of the APS to Azure Synapse Migration Accelerators ([APS2SynaspeVersion1](https://github.com/microsoft/AzureDWScriptsandUtilities/tree/master)) which became the go to toolsets for Microsoft, partners, and customers.

**Tata Consultancy Services (TCS)**, Managing Consultant, Sr. Enterprise Architect 2014 – 2016

**Career Highlights**: Achieved 99–100% customer satisfaction across all projects, many leading to follow-on engagements.

* Cathay United Bank: Defined the enterprise architecture vision, methodology, and 5-year roadmap to support CUB’s business transformation program.
* World Bank Group: Delivered five strategic programs; established integrated data architecture, technology strategy, and standards for the insurance division CIO.
* Citi Bank: Led a mobile resiliency assessment that laid the foundation for institutionalizing resiliency requirements, patterns, and governance in the SDLC.
* Gilead Sciences: Delivered target information reference architecture, BI patterns, and best practices in collaboration with the BI CoE and data governance council.

**Fiserv,** LeadEnterprise Information Architect (IT Director) 2010 – 2013

**Career Highlights:** Received Fiserv’s highest recognition, the Center Stage Award, for delivery excellence. Created a reusable middle-tier platform, Enterprise Transaction Information Management Systems (ETIMS) which enabled new customer products, internal capabilities, and streamlined payment processing.

* Developed transformational enterprise reference architectures and defined technology standards for information management. Founded and led the *Data Governance Committee*.
* Designed logical, physical, and hot–hot high availability architectures for large-scale, real-time payment processing—used in production for fraud detection and prevention.
* Led requirements and architecture for secure mobile payments, merchant offers, and prepaid card solutions.

**OTHER EMPLOYMENT HISTORY ABBREVIATED (15 Years) 1994 – 2009**

* ***Bank of America, SVP,*** *Lead Business Architect & Strategist 2007-2009*

**Career Highlights**: Three spirit medallion awards, one patent filed, and gold level volunteer. Named by YWCA as one of the Women of Achievement from Bank of America (May 2008).

* ***COX Enterprise (Manheim),*** *Principal Consultant, BI Architect 2004 - 2006*

**Career Highlights**: Started a new product for inventory optimization (POINT) which was later acquired by General Motors from Manheim.

* ***NTT Data Americas,*** *Chief Architect, Program Manager 2001 - 2004*

**Career Highlights**: Promotion to corporate architect and member of architecture leadership council. Led large programs ($5-140M) and delivered quality systems within budget and timeline.

* ***AT&T*** *Architect to Director of Enterprise Architecture & Other Roles 1994 - 2001*

**Career Highlights**: Seven progressive promotions. I started as Sr. Software Engineer, other positions include as Software Architect, Program Architect, Project Lead, eCommerce Acting Director, Technology Strategist, Director of Enterprise Application and Data Architecture.

**MISCELLANEOUS**

* U.S. Citizen, Bilingual (English and Chinese)
* Three U.S. patents in the areas of wireless applications, smart messaging and logging, and systems resiliency. 2 awarded (7,139,722 & 6,925,586)

**EDUCATION**

* MBA, Executive Management and Finance, Kennesaw State University (Employer AT&T Sponsored Program 1997-1999)
* PhD, Electrical and Computer Engineering, University of Tennessee