BHUVANESWARAN SHANMUGAM

Senior Principal Software Engineer

Extensive IT Expertise: With over 19 years of experience in IT across various roles including ML Engineer, team lead, and software development advisor, I have proven expertise in full project lifecycles, from requirements analysis to application maintenance and management.

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CORE COMPETENCIES

Data Science and Analytics
Software Architecture Design
Project Management Strategies
Business Process Optimization
Agile and Scrum Methodologies
Advanced Statistical Analysis
ERP System Implementation
Machine Learning Engineering
Financial Services Technology
Retail Management Solutions
Customer Relationship Management
Quality Assurance and Testing
Team Leadership and Development

SOFT SKILLS

Collaborator

Communicator

Planner

Analytical

EDUCATION

❖ Master of Computer Science from Annamalai University in 2013.
❖ Bachelor of Science in Mathematics from Bharathidasan University in 2000.

PROFILE SUMMARY

❖ **Advanced Data Science**: Knowledge statistical modeling, hypothesis testing, exploratory and predictive modeling, with experience in a wide array of Machine Learning techniques—ranging from regression and classification to deep learning and reinforcement learning.

❖ **Broad Technical Proficiency**: Python and its data science libraries (NumPy, Pandas, Scikit-Learn, TensorFlow), along with expertise in visualization tools like Tableau, Power BI, and Plotly.

❖ Resourceful in **translating raw data into actionable insights** and building end-to-end data pipelines to optimize processes.

❖ Strong knowledge of **advanced machine learning** techniques such as natural language processing (NLP), deep learning, and reinforcement learning.

❖ **Complex Project Management**: Successfully led multi-functional teams in delivering critical IT projects for major clients like Dell, Lloyds Banking Group, and Sage Software, ensuring high quality and timely deliverables.

❖ **Versatile Development Skills**: Deep experience in full-stack development and software engineering with a strong foundation in .Net Core, .Net Framework, C#, SQL Server, WCF, WinForms, Angular, Type script, and modern tools such as Kafka, RabbitMQ, and Elastic Search.

❖ **Cross-Industry ERP Solutions**: Designed and deployed ERP and POS systems across multiple industries, delivering tailored software solutions that enhance operational efficiency and drive business value for clients.

❖ **Quality Assurance Leadership**: Strong advocate for software quality and best practices, mentoring teams to adhere to high-quality standards, reducing defects, and enhancing productivity through automated tools and structured processes.

❖ **Innovative Solutions Architect**: Developed tools for automated code generation and data visualization, boosting productivity, reducing errors, and enabling data insights, demonstrating a proactive approach to innovation in software engineering.

❖ **Multi-Layered Analytical Skills**: Competent in both technical and analytical roles, including requirement gathering, solution architecture, and client communication, bridging gaps between technical teams and business stakeholders.

TECHNICAL SKILLS

Hardware / Platforms	Windows 98/XP/2000
Databases	Oracle, SQL Server 2000, 2005 & 2008, MS-Access
Scripting Languages	HTML
Designing	MVC, Design Patterns, SOLID
Unit Testing Tools	NUnit, Typemock
Tools & Version Control Systems	Power BI, Tableau, Kubernetes, AWS, Microsoft Visual Studio, Team Foundation Server, Visual Source Safe
Programming Languages	Python, C#, .Net Core, .Net Framework, JS, HTML, VB, C, C++
Technology	ML Engineering, Numpy, Pandas, Scikit-Learn, Matplotlib, Seaborn, Plotly, TensorFlow, PyTorch, Spark, .NET Framework 3.0 & 3.5, 4.0, 4.5, Win Forms, GDI+, WPF, WCF, elastic Search, RMQ, Kafka, Angular JS, Infragistics, Telerik
Data Modling	Linear Regression, Logistic Regression, Decision Trees, Random Forest, Support Vector Machines, Naive Bayes, K-Nearest Neighbors, Principal Component Analysis, Clustering

💼 WORK EXPERIENCE

Since Jun'15|	Senior Principal Software Engineer | Dell International Services
May'14 – Jun'15|	Tech Lead | TechnoSoftCorp
Feb'11 – Nov'13|	Associate | Cognizant Technology Solutions
Apr'09 – Feb'11|	Sr. Software Engineer | Computers International, Chennai
Aug'08 – Mar'09|	Sr. Software Engineer | Path Finder Software Solutions
Jun'05 – Jul'08|	Software Engineer | RVMatrix Software Technologies
Feb'01 – Jun'05|	Office Administrator | Haden International Group

ANNEXURE – PROJECTS

Project #1: Organization – Dell   **Title:** Gii/ DSA
Client: DELL   **Role:** Team Lead
Tools: C# .Net, WinForms, Angular, Type script, Kafka, elastic Search, WPF, WCF, Oracle, Microsoft Visual Studio, Team Foundation Server, Git Lab.

- ❖ **Objective:** DELL offers a wide range of electronic products to its customers. To streamline its sales operations, the company developed a standalone application aimed at supporting sales activities. The primary users of this application are DELL's sales representatives.
- ❖ **Project Description:** The GII Application, hosted on the CITRIX platform, helps DELL sales representatives manage customer information, gather requirements, and generate quotes. Once a quote is approved, it can be easily converted into an order.

Responsibilities:
- ❖ Acted as a Solution Architect, defining architecture and specifications in detail.
- ❖ Collaborated with Product Owner teams to clarify client requirements and ensure team alignment.
- ❖ Created design documents and upheld quality standards to support high-quality, efficient feature development.

Project #2: Organization -Cognizant Technology Solution   **Title:** Lloyds Banking Group Wealth POS
Client: Lloyds Banking Group   **Role:** Team Member
Tools: C#.NET, WinForms, WPF, Telerik, SQL Server 2005, Visual Studio 2008, TFS, TypeMock, EA

- ❖ **Objective:** Support advisors in wealth and asset management by providing an application for gathering customer information (assets, pensions, investments) and tailoring financial recommendations.
- ❖ **Project Overview:** Developed the Wealth POS (WPOS) system for Lloyds Banking Group to assist advisors with high net worth clients. The application enabled advisors to conduct fact-finding sessions, generate life plans, and develop financial strategies, offering policy recommendations based on client aspirations and needs.

Responsibilities:
- ❖ Acted as liaison between developers and architects, detailing the architecture and specifications.
- ❖ Coordinated with onshore teams to clarify client requirements and ensure team understanding.
- ❖ Produced design documents and maintained quality standards for high-quality, efficient feature development.

Project #3: Organization -Computer International   **Title: NGRMS.** (Next generation Safe Remote Management System)
Client: Corporate Safe Specialists (CSS)   **Role:** Team Member
Tools: C# .Net, WinForms, SQL Server 2005, Microsoft Visual Studio 2008, Visual Source Safe, NUnit (Unit Test)

- ❖ **Project Objective:** Developed a remote monitoring system for "Safe Machine" devices, enabling businesses to securely store and manage daily cash collections. This system optimizes cash flow and enhances security by preventing cash shrinkage and robberies.
- ❖ **Project Description:** The "Safe Machine" is a secure storage device for retail and business cash collections, allowing users to deposit cash directly into their accounts. The project includes three main applications:
  - o **Console Application (NGRMS Client):** Monitors and reports Safe Machine activities to a central server.
  - o **Server Application (NGRMS Server):** Built with WCF, it logs data from multiple machines, exposing services for client data transfer.
  - o **Dashboard (NGRMS Dashboard):** A web interface for remote monitoring and management of Safe Machine operations.

Responsibilities:
- ❖ Led the development of NGRMS Client and Server applications.
- ❖ Tasks included requirement analysis, coding, testing, and deployment, ensuring high-quality, defect-free delivery. Implemented multi-threaded services like Safe Monitor, Data Transfer, and Notifications. The server application, using WCF and .NET Remoting, securely logs and manages Safe Machine data with SQL Server for storage and email alerts for critical issues.

Project #4: Organization -Computer International   **Title:** Sage Timberline Enterprise
Client: Sage Software   **Role:** Team Member
Tools: C# .Net, WinForms, Infragistics, SQL Server 2005, Microsoft Visual Studio 2008, Team Foundation Server, Final builder 6, Nunit (Unit Test).

- ❖ **Project Objective:** Developed Sage Timberline Enterprise, a solution to streamline daily operations for the Construction and Real Estate (CRE) industry.
- ❖ **Project Description:** Sage Timberline Enterprise is a management solution for CRE, offering modules for service agreements, job costing, purchasing, inventory, and job management. It automates work orders, invoicing, dispatch, and customer equipment tracking, tailored to CRE business needs.

Computers International

Responsibilities:

- ❖ Our 7-member Agile Scrum team included four developers, two testers, a scrum master, and a product owner. Each 5-week sprint involved one week of task analysis and planning, three weeks of development, and one week of testing. Key tasks included customized UI design, database setup, and coding business logic across classes like 'Business Entity' and 'Business Object.' Data binding linked UI controls to business objects, with custom exceptions for validation and unit tests to ensure functionality.

Project #5: Organization - PathFinder Software Solutions Pvt. Ltd.   **Title:** eSmart Store. (Retail Product)
Client: KPN, Nuts and Spice, etc.   **Role:** Team Member
Tools: C#.Net, WinForms, SQL Server 2000, Microsoft Visual Studio, Visual Source Safe.

- ❖ **Project Objective:** Provided a complete retail management solution for stores.
- ❖ **Project Description:** The project consists of two Windows-based applications:
  - o Warehouse Application (eSmart Store Warehouse): Manages purchase orders, goods received, quality checks, stock updates, supplier billing, and payments.
  - o Point of Sale (POS) Application: Enables billing, stock updates, direct supplier orders, and generates various sales reports.

Responsibilities:

- ❖ Table creation, UI design, and implementation of UI functionality, handled defect fixing and enhancements.

Project #6: Organization - RVMatrix Software Technologies Pvt. Ltd.   **Title:** Works Study
Client: Works Study Hydralics Pvt. Limited   **Role:** Team Member
Tools: VB, SQL Server 2005, Microsoft Visual Studio, Visual Source Safe.
Project Description: WORKSTUDY HYDROLICS is a manufacturing company specializing in auto parts, supplying to clients like TVS, FORD, and HYUNDAI. This Windows-based application is designed to automate the daily operations of WORKSTUDY HYDROLICS PVT. LTD. Key modules in this ERP system include "Marketing and Sales," "Purchasing and Stores," "Quality," "Production," and "HR Payroll."

- ❖ **Marketing and Sales Module:** This module manages both master data (such as customer, product, and unit of measure details) and day-to-day transactions. It allows users to generate customer quotations, process sales orders (with or without quotations), and record deliveries through the delivery challan. Invoices are raised based on deliveries, and customer payments are tracked via a payment entry form.
- ❖ **Purchasing and Stores Module:** This module oversees supplier data, raw material details, and unit measures, as well as transactional processes like raising purchase orders. Upon receiving materials, users log entries via the Goods Received Note (GRN), conduct quality checks, and update stock levels. Supplier bills are recorded and payments are made through the supplier bill and payment entry forms. Defective materials can be returned to the supplier using the Goods Return Note.
- ❖ **HR Payroll Module:** This module handles the complete HR process. Users can issue call letters to applicants, log interview details, and prepare appointment orders. Once an employee is hired, their joining details are captured and stored.

Responsibilities: I was actively involved in the complete functional study of this system. I initiated this project with a team of two members. We began by analyzing the full business requirements and started setting up the database, using SQL Server as the backend. All tables were designed following normalization principles, with primary and foreign keys defined during table creation. We implemented triggers on tables where stock updates were necessary and used database functions where applicable.

Before starting UI design, we created custom controls tailored to the project's needs, which allowed for greater control and customization across all interfaces. Each database table was represented by 'Business Entities,' while business logic was implemented separately in 'Business Objects'. These 'Business Entities' facilitated the mapping between business objects and the database. Finally, database-specific logic was isolated within a dedicated 'Database Layer.'

Project #7: Organization - RVMatrix Software Technologies Pvt. Ltd.   **Title:** CMD ERP and CMD PAY
Client: CLASSIC MOULDS AND DIES   **Role:** Team Member
Tools: VB, SQL Server 2005, Microsoft Visual Studio, Visual Source Safe.
Project Description: This ERP solution encompasses several modules, including Marketing & Sales, Purchasing & Stores, Production, Subcontracting and Inspection, Quality Control, and Payroll.

- ❖ Marketing & Sales: The process begins with creating cost estimates based on customer requirements. From these estimates, quotations are prepared and sent to customers. Once a quote is approved and a purchase order is received, the purchasing team assesses stock availability and places orders with suppliers as needed. The purchased materials are used to produce finished goods, which are then invoiced and delivered to customers. The finance team oversees invoice collection.
- ❖ Purchasing & Stores: The purchasing team places orders with vendors based on customer orders and available stock. When materials are received, they undergo inspection, and the stock is updated accordingly. Any rejected materials are returned to suppliers and adjusted in the supplier bills. The finance team manages supplier bills and payments.
- ❖ Production: A bill of materials (BOM) is created for each product. Based on the BOM, the production team requests raw materials from the stores. If stock is insufficient, the stores team raises purchase orders. Once the raw materials are available, production begins. If certain operations cannot be performed in-house, the semi-finished products are subcontracted for completion. After subcontracting, the remaining operations are completed in-house, and the finished products undergo inspection. Products that pass inspection are added to stock and delivered to customers.
- ❖ Subcontracting and Inspection: The BOM lists all raw materials and subcontracting requirements needed for production. If the company lacks the machinery for certain operations, these tasks are subcontracted. The stores team issues purchase orders to subcontractors, specifying the required operations. Semi-finished products are sent to subcontractors, and once their work is completed, the parts are inspected. Parts that pass inspection are added to stock, while those that don't are reworked or scrapped.

❖ Payroll: The payroll module manages employee details such as name, date of birth, address, designation, and grade. Shift rosters track employee shifts, and daily attendance is recorded. Salaries are calculated based on attendance, and bonuses are awarded based on performance. Taxes are calculated monthly and deducted from salaries, along with EPF and ESI contributions, which are submitted to the appropriate government agencies.

Responsibilities: This was a migration project, originally developed in Visual Basic with an MS Access database. Due to client requirements, the project was migrated to SQL Server, and I was involved in the entire migration process.

I was also given the opportunity to implement a customized payroll application for the client. My responsibility was to bring the payroll application into production, tailoring it to meet the client's specific needs. I spent a year on-site, gathering detailed requirements and customizing the payroll system accordingly. I participated in every phase, from table creation and UI design to implementing UI functionality. I received high praise from the client for successfully completing the payroll project and the seamless migration of the ERP application from MS Access to SQL Server.

PERSONAL DETAILS

Date of Birth: 14th August 1977 || **Address:** Plot No.3, Sri Manjunatha Villa, Manjunatha Nagar, ESI Ring Road, Hosur

Pathfinder   Computers International   cognizant   Technosoft CORPORATION   DELL