Rob Johnston, *Secret Clearance*

Rob is a highly experienced Technology Architect with over 20 years of expertise in designing and modernizing enterprise web applications and automated testing frameworks for federal departments. With Secret clearance and a strong foundation in engineering, Rob has consistently delivered scalable, secure, and maintainable solutions using .NET technologies, SQL Server, and modern web standards. His work reflects a deep commitment to clean architecture, accessibility compliance, and strategic alignment with government IT roadmaps.

- Modernized legacy systems across ESDC and IRCC, implementing domain-driven design and clean architecture to support long-term scalability and maintainability.
- Spearheaded the architectural design of automated testing frameworks for federal pension systems, reducing manual testing cycles and improving release confidence.
- Delivered secure, extensible ASP.NET Razor Pages applications integrated with SQL Server and Dapper for test management and reporting.
- Led the migration of legacy content management systems to Drupal, enhancing accessibility, performance, and maintainability.
- Designed modular, high-performance web architectures for ministerial portals, intranet systems, and public-facing applications.
- Provided strategic architectural guidance across departments including ESDC, CIC, and DND, aligning solutions with enterprise standards and evolving business needs.
- Developed reusable middle-tier libraries and automated testing frameworks to support complex business logic and numerical calculations.

Education

1994 – Queen's University, Bachelor of Science in Engineering

1996 – Queen's University, Certificate of Intermediate Ability in Russian

2006 – University of Havana, Certificate in Spanish

Professional Experience

Employment and Social Development Canada
July 2019 – October 2024
Senior Technology Architect

Pensions Automated Testing (PAT)

The PAT project was a multiyear project to generate and run automated tests for the Pensions Testing Service's various systems including the Information Technology Renewal Delivery System (ITRDS) and the Corporate Management Payment System (CPMS). Ongoing development of the Pensions Automated Testing solution that began as a solution for the Old Age Security Service Improvement Strategy (OAS-SIS).

Old Age Security Service Improvement Strategy (OAS-SIS)

The OAS-SIS project was a large multiyear project to decommission the aging OAS legacy system and migrate processing capabilities to a modern IT system and e-Service platforms.

Responsibilities:
- Architected and implemented domain-driven design and clean architecture solutions for the Pensions Automated Testing (PAT) and OAS-SIS projects, establishing scalable, modular, and maintainable frameworks for automated testing across multiple pension systems.
- Designed the end-to-end automated testing architecture, including Selenium test pipelines, data storage, and reporting layers, improving regression coverage while significantly reducing manual testing effort and cycle time.
- Developed ASP.NET Razor Pages web applications for test creation, execution, and reporting, leveraging C#, .NET Core 3.1, SQL Server, and Dapper, ensuring a secure, maintainable, and extensible platform for ongoing automated testing initiatives.
- Engineered back-end APIs to process and consolidate automated test results, implement trend tracking, and deliver actionable metrics to stakeholders, supporting data-driven decision-making for release readiness.
- Designed and implemented custom SQL Server Reporting Services (SSRS) reports using Azure DevOps Server data warehouse, providing executive and technical stakeholders with detailed insights on test coverage, defect trends, and system reliability.
- Integrated WET-BOEW accessibility standards and jQuery for front-end interactions, ensuring compliance with government web accessibility requirements while maintaining usability and performance.
- Led architectural reviews, code quality assessments, and technical mentoring, guiding developers in applying clean architecture principles, secure coding practices, and automated testing best practices across the team.

- Collaborated closely with QA, product owners, and technical teams to define automation strategies, prioritize backlog items, optimize test scenarios, and improve system reliability and maintainability.
- Optimized and maintained SQL Server schemas and data access patterns to support high-performance automated testing and reporting, including indexing, query tuning, and integration with test automation pipelines.
- Provided strategic guidance for long-term architecture planning, aligning automated testing frameworks and modernization efforts with enterprise standards and IT roadmap objectives.

Technical Environment: Visual Studio 2019 & 2022, Azure DevOps Server 2019, Net Core 3.1 & 5.0, ASP.Net Razor Pages, C#, SQL Server, jQuery, WET-BOEW, Dapper

Immigration, Refugees, and Citizenship Canada
September 2014 – June 2019
Senior Technology Architect

Paul Yuzyk Award

The Paul Yuzyk Award for Multiculturalism recognizes exceptional contributions to multiculturalism and integration of newcomers to Canada. Citizenship and Immigration Canada (CIC) made changes to the award to allow a wider range of Canadians to be recognized. In addition to the lifetime/outstanding achievement award, the program was expanded to include awards for youths and organizations. Mr. Johnston was in charge of architecting the IM/IT side of the project to create a new data model for MS SQL Server, the middle-tier business logic to access the databases and the user interface of the application.

Controlled Key Forms Inventory Tracking System (CKFITS)

CKFITS is the IM/IT system used to record and submit controlled document inventories from missions' overseas and domestic ports of entry. Mr. Johnston was in charge of architecting the changes and fixes identified by Forms Management, updating the site to new internal standards of the WET toolkit, and re-architecting the solution for reliability and performance.

Information Management Intake System

The IM/IT Intake System is a core application in support of the departments move to an Application Lifecycle Management strategy. It is the first stop to request a new system or an update to an existing system. Mr. Johnston was in charge of developing a web-based user interface and workflow to allow employees to provide all information required to initiate an intake request along with architecting the web application in C# running on IIS, with connections to TFS and SMTP servers. He also wrote the business logic to populate TFS with the user's request and send e-mail confirmations with the new system-assigned ticket number.

Responsibilities:
- Architected and enhanced the IRCC public website and ministerial intranet, overseeing full lifecycle development of new features, UI/UX improvements, and platform enhancements to meet evolving business needs.
- Conducted comprehensive business and application requirement assessments across multiple IRCC projects, analyzing current-state systems, workflows, and dependencies to define future-state architecture, integrated applications, and technical frameworks. For example, consolidated four separate web applications used for intranet user comments into a single, streamlined web service to improve maintainability and user experience.
- Engaged with stakeholders to gather requirements, evaluate policies, and analyze alternative solutions and technologies; provided architecture recommendations to address complex business problems. An example includes evaluating solutions to validate the Machine Readable Zone (MRZ) for Machine Readable Travel Documents (MRTDs) in compliance with ICAO Doc 9303-4 standards.

- Evaluated existing project landscapes and technology stacks to recommend integrated solutions; led the integration of commercial off-the-shelf (COTS) software and custom components into enterprise architectures once solutions were approved.

- Performed application analysis, solution design, development, capacity planning, and end-to-end testing for web-based technologies using ASP.NET Web APIs, ensuring scalability, performance, and reliability.

- Monitored emerging technology trends and industry standards to ensure that IRCC web solutions remained flexible, scalable, secure, and aligned with organizational IT strategies.

- Designed and implemented 3-tiered applications using C#, ASP.NET, and MS SQL Server, focusing on modularity, maintainability, and performance optimization within rational database systems.

- Provided technical guidance and strategic advice to stakeholders and development teams on adopting and implementing new technologies, frameworks, and architectural patterns to enhance solution effectiveness.

- Conducted impact and cost-benefit analyses for proposed applications, solutions, and process changes; reviewed results with end users and communicated recommendations to senior management. For example, evaluated enhancements for TFS functionalities to optimize development workflows.

- Mentored and coached the application support team during development efforts, guiding proper usage of infrastructure, defining technology requirements, and performing system analysis to ensure adherence to architectural standards.

- Reviewed initial application designs and technical architectures to ensure compliance with industry best practices; recommended improvements to simplify application design, enhance performance, and reduce complexity in existing systems.

Technical Environment: Visual Studio, Team Foundation Server, ASP.Net, C#, SQL Server, jQuery, WET-BOEW, Entity Framework 6

Privy Council Office
January 2012 – May 2014
Senior Technology Architect

Canada's Economic Action Plan (CEAP)
The CEAP has funding programs which include Infrastructure Canada Program ($2B), Municipal Rural Infrastructure Fund ($1.2B), Canadian Strategic Infrastructure Fund ($4B), Border Infrastructure Fund ($.6B), the Gas Tax Fund ($11.8B) and the Build Canada Funds ($30B) which is an important part of the Government of Canada's Economic Action Plan which provides a timely, targeted and temporary stimulus to the Canadian economy and protects Canadians during the global recession. The Business Solutions Management Group of the Informatics and Technical Services Division of the Privy Council Office provides IM/IT solutions and support to the Prime Minister's Office and all branches of PCO including informatics analysis, design, development, enhancement and support for new and existing applications.

Responsibilities:
- Provided guidance, technical direction, and support for emerging technologies such as Drupal 7, enabling more effective application development, testing, debugging, and operational support.
- Monitored external technology trends and best practices to ensure web architectures remained reliable, flexible, scalable, and adaptable, aligning with the strategic directions of the CEAP.
- Performed application analysis, solution design, development, capacity planning, and end-to-end testing for web-based platforms using Drupal, PHP, and MS SQL Server, ensuring maintainability and high performance.
- Architected, developed, and enhanced the Prime Minister's website and the Economic Action Plan (CEAP) web portal, designing new features and improving existing functionality to meet evolving business needs.
- Conducted impact and cost-benefit analyses for proposed processes and technology upgrades, including Visual Studio enhancements, identifying areas for growth, efficiency gains, and strategic technology changes.
- Reviewed initial application designs and technical architectures to ensure adherence to industry best practices and standards; recommended performance optimizations through simplification and modularization of existing solutions.
- Assessed business and application requirements under the Privy Council's CEAP mandate, evaluating current technical architectures to define future-state strategies, frameworks, and integrated technical architectures, detailing functional and technical requirements.
- Analyzed and documented alternative technologies to address business needs; implemented solutions such as mobile-friendly alternatives for the CEAP site to overcome technical challenges and improve accessibility.
- Provided technical guidance and support to application and support teams for effective utilization of Microsoft Suite technologies, SQL-based applications, and other infrastructure components.
- Led the migration of data from multiple legacy content management systems to Drupal running on IIS with MS SQL Server, ensuring data integrity, accessibility, and platform consistency.

- Ensured comprehensive integration of technology solutions—including hardware, software, operating systems, and network infrastructures—within the Microsoft environment at the Privy Council Office to achieve operational reliability and security.

Technical Environment: Visual Studio, Eclipse, Team Foundation Server, IIS, ASP, CSS, SQL Server 2000/2008, Drupal 7.

Canadian Forces Personnel Support Agency
November 2011 – December 2011
Senior Technology Architect

Insurance Needs Assessment
The Insurance Needs Assessment program offers term life and disability insurance to Canadian Forces members and their families. The program originated as an MS Excel spreadsheet application and was redesigned as an IM/IT web-based application.

Responsibilities:
- Led the initial design of technical architecture, defining supporting strategies and frameworks to ensure alignment with business goals and application requirements.
- Engaged with stakeholders to gather and analyze policies, functional requirements, and business objectives, evaluating multiple technologies to identify optimal solutions.
- Continuously monitored and evaluated the solution architecture to ensure technologies remained current, aligned with industry best practices, government standards, and the strategic direction of CFPSA.
- Translated complex insurance calculation requirements from functional specifications and design documents into a robust, reusable middle-tier numerical library, ensuring accuracy and maintainability.
- Developed parameterized unit testing frameworks to validate numerical calculations, improve code quality, and support automated regression testing processes.

Technical Environment: Visual Studio 2010 Ultimate, Team Foundation Server, C#, IIS, ASP.Net, Pex.

Department of National Defence
October 2010 – September 2011
Senior Technology Architect

Canadian Army Website
The Army Website and its sub-sites are composed of a mixture of static and dynamic pages displaying information about equipment, units, and news articles. The IM/IT site is full of multimedia content used to display text and/or video stories and podcasts. Rob was responsible for the IM/IT architecture, design, development, and analysis of the website.

Responsibilities:
- Developed and implemented technical architecture, strategies, and frameworks by translating approved business and functional requirements into detailed technical specifications, including current and future state documentation for the website.
- Conducted full application lifecycle activities—analysis, design, development, capacity planning, and testing—for web-based solutions using classic ASP and MS SQL Server.
- Reviewed and optimized existing MS-SQL database schemas, created new data models, and developed stored procedures to support application functionality.
- Designed and implemented a middle-tier layer in VBScript to access stored procedures, ensuring modularity, maintainability, and performance.
- Identified and analyzed business problems, evaluated alternative technologies, and documented solutions to address functional requirements, such as improving data retrieval efficiency for dynamic web pages.
- Managed integration of approved technologies into the overall architectural solution, ensuring alignment with project goals and IT standards.
- Monitored technology trends to ensure the architectural solution remained reliable, scalable, flexible, and consistent with DND and industry directions.
- Provided strategic direction and IT governance, including evaluation and introduction of new technologies, such as migrating a classic ASP site to a 3-tiered architecture.
- Led data migration from legacy database structures and coordinated front-end web page coding to support viewing and editing of records, including planning production deployment.
- Provided ongoing support and guidance to development and application support teams, focusing on correct use of infrastructure and adherence to architectural standards.
- Reviewed existing application design and technical infrastructure, including database schemas, recommending optimizations to improve performance, maintainability, and compliance with industry standards.

Technical Environment: Visual Studio, Dreamweaver, VBScript, IIS, ASP, CSS, SQL Server 2000 & 2005, CLF2