

# ROBERT P. CHURCHILL

CBAP, IIBA-CBDA, PMP, CSM, CSPO, CSD, Lean Six Sigma Black Belt

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## **BUSINESS ANALYST / PROCESS IMPROVEMENT SPECIALIST**

I apply a career's worth of experience to help guide full life cycle engagements through discovery, mapping, data analysis, conceptual modeling, process improvement, requirements, design, implementation, testing and V&V, final acceptance, ongoing support and governance, and end-of-life and replacement. My extensive technical experience helps me work with technical teams to deliver robust, efficient solutions to customers in manufacturing, insurance, finance, health care, and logistics.

### **Core Competencies: Analysis and Engineering**

Systems Analysis	Process Improvement	Operations Research
Discovery / Mapping	Six Sigma Analysis (Quality)	Computer Simulation
Data Collection & Analysis	Lean Analysis (Throughput)	Monte Carlo Analysis
Conceptual Modeling	System Architecture	Project/Program Management
Requirements Engineering	Inter-Process Communication	Budget/Contract Management
System Implementation	Large Scale System Integration	Project Finance (TVOM)
Testing / V&V / Acceptance	User Interface Design UI/UX	Process Automation
SDLC / Scrum / Agile / Waterfall	Interactive Computer Graphics	Full Life Cycle Engagement

### **Certifications**

Certified Business Analysis Professional (CBAP) #13426854  
Certification in Business Data Analytics (CBDA) #27083354  
Project Management Professional (PMP) #1284485  
Certified ScrumMaster, Certified Scrum Product Owner, Certified Scrum Developer (Scrum Alliance)  
Certified Lean Six Sigma Black Belt (CLSSBB) #VIL020684 (through 2018)

### **Accomplishments and Benefits Realized**

Designed, built, and commissioned many large software systems in every role through full life cycle. Improved operations and procurements against Iron Triangle constraints of Cost, Time, and Quality. Effective analysis and decomposition led to robust, flexible, modular solution designs. Detailed data collection, analysis, and conditioning enhanced use for system inputs and outputs. Graphical process maps and interfaces allowed more accurate control and situational awareness.

### **Languages and Tools**

C/C++, JavaScript, HTML/CSS, Node.js, MySQL, SQL, R, Python, FORTRAN, Pascal/Delphi, Java, SLX, Word, Excel, PowerPoint, Visio, Project, SharePoint, Jira, Rally, Confluence, Git, Tableau

### **Experience**

**Universal Studios** - Orlando, FL (contracted through Hays) 2018

#### ***Business Analyst, Software Reverse Engineer, Process Improvement Specialist***

Applied business analysis and process engineering techniques of discovery, process mapping, data analysis, software engineering, management, governance, and configuration to document and improve microservices web architecture and DevOps processes as part of Kanban triage team.

- Identified opportunities to improve software architecture, debugging and failure response procedures, documentation, and training.
- Designed unified interfaces for crowdsourcing detailed documentation of code and related data and communication flows, improving real-time situational awareness of the entire functional stack, and organizing documentation and support materials for all working systems.
- Reverse engineered software operations in many languages, but mainly Node/Loopback/Bluebird.
- Proposed and prepared demo for automated generation of animation of all process flows in a way that showed messages, data items, input parameters, and return values.

**Independent Business and Process Analyst** – Davenport (Orlando), FL 2015–present

#### ***Business Analyst, Writer, Communicator***

Refreshed and extended development, analysis, communication, and leadership skills through research, courses, books, meetups, multiple industry certifications, and extensive personal website.

- Gave presentations to many professional audiences and volunteered as mentor and consultant.

**RTR Technologies, LLC** (split from Regal) – Aberdeen, MD, Lexington Park, MD 2002-2015  
**Regal Decision Systems, Inc.** - Baltimore (Linthicum), MD, Lexington Park, MD

***Operations Research Analyst, Business Analyst, Software Engineer, Simulation Developer***

Applied business analysis and process engineering techniques of elicitation, discovery, data collection, domain knowledge, software engineering, architecture, design, and communication as part of Agile teams to create and use process simulations in the United States, Canada, and Mexico.

Served as program manager for multiple analysis and development efforts and program manager for several logistics task orders: \$4.7M/year, 35 employees, 3 subcontractors, and a satellite office.

- All activities supported improved efficiency, cost, reliability, maintainability, robustness, and speed.
- Became expert in operations research and discrete-event simulation tools and techniques.
- Analyzed aircraft logistics support operations as part of team using the largest GPSS/H discrete-event simulation model ever written and additional ad hoc techniques.
- Performed full-scope Verification and Validation (V&V) of software system designed to manage entire fleet of Navy and Marine Corps F-18 series aircraft per MIL-STD-3022.
- Performed Analysis of Alternatives (AoA), Cost-Benefit Analysis (CBA) of high-volume processes.
- Reverse-engineered and specified redesign of major agency staffing model (27,000 staff, 100+ activities, 500+ locations) to improve accuracy and clarity, and incorporate business rules.
- Designed and built 3D pedestrian ingress/egress simulations with agent and threat behaviors.
- Built and used tools to simulate land border crossings on both sides of both United States borders.
- Created Medical Office Simulation tool to analyze and streamline operations in medical practices.

**American Auto-Matrix** - Pittsburgh, PA 2000–2002

***Senior Software Engineer***

Applied business analysis and process engineering techniques of discovery, data collection, domain knowledge, software engineering, and communication to update HVAC controller products and supervisory control software as part of a development, service, and support team.

- Updated PC-based driver software and created installers for multiple MS operating systems.
- Managed software releases and version control.
- Ran technical support web forum to improve communication with direct customers.

**Bricmont, Inc.** (later acquired by Andritz) - Pittsburgh, PA 1994–2000

***Software Engineer, Control Systems Engineer, Simulation Developer, Process Engineer***

Applied business analysis and process engineering techniques of elicitation, discovery, data collection, domain knowledge, software engineering, architecture, and communication to design, implement, and service Level 2 model-predictive supervisory temperature control and material handling systems for steel reheat and induction melting furnaces in locations all over the world.

- Completely re-architected and re-implemented Level 2 supervisory control software. Migrated department to faster/cheaper systems and introduced new development tools.
- Systems featured 1D and 2D real-time finite element thermal simulations, 2D and 3D GUIs, communications with other processes, and archiving and display of historical data.
- Systems improved steel quality and saved 10%+ on fuel costs.
- Developed and commissioned numerous systems (of up to 50,000 lines of custom code and interfaces often written entirely by me) in the United States, Canada, Mexico, South Korea, and Thailand, and served as site representative and VV&A agent.

**CIScorp (Corporate Information Systems, Inc.)** - Pittsburgh, PA 1993–1994

***Business Analyst, FileNet Imaging Programmer, Process Engineer***

Applied business analysis and process engineering techniques of elicitation, discovery, data collection, domain knowledge, software engineering, design, and communication as part of analysis and development teams to design and implement FileNet document imaging systems for business process re-engineering projects in many industries.

- Benefits included improved time service and accuracy, and cost savings of over 30%.
- Business processes ranged from the overtime pay reporting for an engineering business unit to the entire disability insurance underwriting department at a major insurance company.
- Improvements included Robotic Process Automation of interfaces with mainframe systems through script-driven, text-based terminal windows running on PCs as part of the FileNet client applications.

**Micro Control Systems** (*contracted through IMC International*) - Pittsburgh, PA 1993  
**Control Systems Engineer**  
 Applied analysis and software engineering skills to update database and user interface of control system for soaking pits and reheat furnaces.

**Westinghouse** (*contracted through IMC International*) - Pittsburgh, PA 1989–1992  
**Software Engineer, Simulation Developer, Process Engineer**  
 Applied business analysis and process engineering techniques of research, process mapping, data collection, conceptual modeling, domain knowledge, software engineering, and communication in cooperative, iterative teams to design and implement software to simulate fluid systems in full scope, real-time BWR and PWR nuclear power plant training simulators on multi-processor distributed architectures.

- Models ranged from single-phase, single component systems to complex, multi-phase, multi-component systems and included interactions with control panels, instruments, and environments.
- Created system to build model constants, interfaces, and documentation from acquired data.
- Built PC-based software simulation framework to develop and test concepts to be implemented on the delivered system.

**Sprout-Bauer** (*later acquired by Andritz*) - Muncy, PA 1988–1989  
**Process Engineer, Systems Analyst**  
 Applied business analysis and process engineering techniques of discovery, data collection, process mapping, domain knowledge, and process improvement skills to map flow and instrumentation systems, perform calculations for detailed heat and material balances, and recommend quality improvements for several types of new and existing turnkey mechanical pulping systems.

- Performed quality and operational audits at paper mills in the United States and Canada.
- Assisted in start-up and troubleshooting of instrumentation and process equipment.
- Used simulations and programmed custom tools to automate calculations.

**Military Service**

**United States Army** - Fort Bliss, El Paso, TX 1984–1988  
**Air Defense Artillery**

**Education**

**Carnegie Mellon University** - Pittsburgh, PA 1984  
**Bachelor of Science – Mechanical Engineering**  
 Added concentration in computer science, real-time computing, and computer graphics.

**Patent**

**US 6259071** (<http://www.freepatentsonline.com/6259071.html>) 2001  
 Single-point temperature control system for a multi-section line furnace

**Organizations**

**International Institute for Business Analysis (IIBA)** 2017-present

**Volunteer Activities**

**Advisory Committee** – Post University, Waterbury, CT 2015-2021  
**Industry Representative to CIS Program**  
 Offered recommendations regarding soft skills, team dynamics, business analysis, discovery, requirements, data usage and integration, and tools.

**Baltimore NodeSchool** – Baltimore, MD 2017-2018  
**Volunteer Programming Mentor**  
 Coached new JavaScript programmers through online programming exercises.

**Ruby for Good** – Front Royal, VA 2016  
**Volunteer Programmer and Analyst**  
 Four-day group project to implement web systems for various charities, including the National Zoo's Red Panda research program.

**Junior Achievement** – Pittsburgh, PA 1991-1993  
**Industry Advisor, Evening Program**  
 Served program for two years in which high school students form and operate their own companies. I had participated in the program as a student for three years, serving as Production Manager, VP of Production, and finally President my senior year.