

Ronald Burr, PhD

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Accomplished and award-winning Technical Leader, Systems/Software Architect, Data Scientist and Python/Full-Stack Developer with experience in architecture, roadmaps and spearheading innovation for product development and operational improvements across diverse cross-functional domains. Renowned for exceptional structured problem-solving and decision-making abilities and a well-honed systems and service oriented mindset. Dedicated to and hands-on in propelling cutting-edge initiatives in rapid full-stack product development, simulations/prototypes, testing, machine learning, artificial intelligence, deep-learning, and data analytics to achieve outstanding results. Consistent track record guiding teams and organizations to short and long-term goals and objectives.

Core Competencies

Software Engineering: Proficient in full-stack web application and mobile application development.

Problem-Solving & Decision-Making: Skilled in identifying complex issues, troubleshooting, and implementing effective solutions including root cause analysis (RCA) and corrective & preventive actions (CAPA).

Strategy & Planning: Experienced in formulating IT strategies and long-term planning to align technology with business plans and goals including vision, roadmaps and structured decision making.

Leadership: Proven leadership capabilities in guiding cross-functional teams and achieving project objectives.

Organizational Skills: Exceptional organizational abilities to manage tasks, projects, and resources efficiently.

Communication: Strong written, visualization and verbal skills to convey concepts to all stakeholders.

Interpersonal: Effective at building and maintaining positive relationships with colleagues, clients, and stakeholders.

Teamwork: Track record of recruiting, building, recognizing and participating in collaborative high performance teams.

Program Management: Proven and certified in project management, concept to launch (SDLC, Agile, PMI-ACP, PSM).

System Administration: Proficient in system administration, including high 99.99% SLA cloud platforms/products.

Data Science & Statistics: Skilled in data analysis, data science, and statistical methods, including generating insights, visualizations, processing pipelines and predictive models including python toolkits and deep learning/LLMs.

Process Automation: Skilled and experienced at process automation in both virtual (RPA, AI) and physical systems.

Proposals & Business Development: Proficient developing and integrating solutions and responses to customer needs and RFPs, both as a subject matter expert (SME) and coordinator/facilitator; versed at both writing (e.g. proposals, reports) and presentations.

Contracts & Negotiations: Experienced in contract management and negotiation processes.

Customer Satisfaction: Extensive customer service and relationship management including custom systems integration (e.g., EDI).

Technical Skills

Programming Languages: Python, Java, C/C++, PHP, JavaScript, Node.js, HTML, CSS, SASS, SQL

Web Development: React, React-Native, Bootstrap, AJAX, Django, Flask, Laravel, Drupal, HTML, CSS, JSON

Database Management: MySQL, PostgreSQL, MongoDB, AWS Dynamo, Redis & Memcached

Cloud Computing: AWS (Amazon Web Services), AWS Lambda, AWS S3 (Simple Storage Service), AWS API Gateway, AWS CloudWatch, AWS SES/SNS/SQS (Simple Email Service/Notification Service/Queue Services), AWS Personalize, AWS Kendra, Terraform, AWS CloudFormation, Apache/Nginx, LAMP

Configuration Management: Git, GitLab, Bitbucket,

Big Data & Analytics: Hadoop, Spark, Tableau, Business Intelligence (BI), Reporting, Algorithms, Modeling, Mining, Advanced & Applied Mathematics

Machine Learning & AI: Scikit-Learn, Numpy, Pandas, Matplotlib, Plotly, NLP Toolkit

Deep Learning & LLM: PyTorch, TensorFlow, ChatGPT, DALL-E, Sagemaker, Personalize, Kendra

Testing & Quality Assurance: Test Cases, Cypress, Robot Framework

Operating Systems: Linux, Windows, Android, iOS

Networking & Security: Networking Protocols, API Integration, REST

User Interface (UI): ADA/WCAG Compliance, Atomic ADA, pa11y, User Experience (UX)

Program Management: Jira, Trello, Confluence, MS Project, Teams, Slack

Information Systems Security, Quality & Compliance: ISO 27001, ISO 9001, NIST 800-53, GDPR, FDA 510(k), HIPPA, Metrics and Objectives, Policies and Procedures (SOPs), Risk Management, Asset Management, Change Management, Vendor Management, Business Continuity, Disaster Recovery (DR), Data Governance, Root Cause Analysis (RCA), Corrective and Preventive Actions (CAPAs), Management Reviews and Internal/External Audits

Professional Experience

Technical Program Manager / Python & Web Developer / Data Scientist / Information Security (CTO/CISO)

Stonefly Systems | Parkton, MD | March 2012 – Present

- Built and led cross-functional teams and client organizations, driving innovation and growth within the medical and IT sectors.
- Managed program development, resulting in a typical 20-40% reduction in project completion time.
- Utilized Agile and Lean Six Sigma methodologies, optimizing cost-efficiency and achieving a typical 15-25% reduction in expenses.
- Spearheaded a high-performing development team, implementing full-stack solutions.
- Led teams to architect, develop, and release over 30 product software applications, utilizing a wide range of technologies.
- Collaborated with cross-functional departments and stakeholders, aligning technical initiatives with corporate objectives.
- Drove technology and security initiatives, overseeing a portfolio of projects involving project management (PMO), development, operations, and quality-security (DevSecOps).
- Oversaw end-to-end product development process initiatives, yielding a 30% increase in operational efficiency.
- Performed ISO 9001 Quality Audits and ISO 27001 Security Audits, achieving 100% compliance.
- Key clients included Macrosonix, Connectus/Newsbox, R2I, Blue Water Media, Noxilizer, International Software.
- Received SmartCEO CXO Excellence and BIG Business Innovation awards.

Chief Technology & Security Officer (CTO/CISO)

Burnalong / Tivity Health | Pikesville, MD | June 2020 – Present

- Directed the development and launch of a groundbreaking virtual health and wellness platform, generating a 200% increase in engagement.
- Implemented a cutting-edge content delivery infrastructure, enhancing scalability and reliability.
- Steered end-to-end development, including React & React-Native front-ends, Python and Node.js back-end API/micro-services, AWS cloud architecture, PostgreSQL and Dynamo databases, and AI/ML-based recommendations.
- Adopted automated quality assurance testing, achieving a consistent 99.99% uptime SLA.
- Conducted ISO 9001 Quality Audits and ISO 27001 Security Audits, ensuring 100% compliance.
- Driven and grown to acquisition by integration into Tivity Health.

Chief Technology & Operating Officer (CTO/COO)

Canton Group | Baltimore, MD | Feb 2014 – Jan 2019

- Orchestrated business operations including portfolio development, support, quality assurance, risk assessment, and requirements management systems.
- Managed end-to-end project lifecycles, maintaining stringent quality systems and supervising user requirements, design, and technology concepts.
- Established and nurtured strategic client relationships, translating to a 30% increase in partnership growth.
- Devised and executed the seamless integration of systems and applications across various domains.
- Migrated legacy software and technology, modernizing and automating systems, reducing IT maintenance costs by 20%.

Chief Technology Officer (CTO)

CSA Medical, Baltimore, MD | March 2008 – March 2012

- Crafted, mentored, and led cross-functional teams in R&D, Operations, Service, Quality-Regulatory, and IT.
- Innovated and developed a patented cryosurgery system, obtained FDA/ISO regulatory approval, and applied Six Sigma continuous improvement processes.
- Designed, developed, deployed, and maintained a cloud-based information technology & compliance infrastructure.
- Driven to acquisition by a large medical organization (Steris Endoscopy).

Additional Experience

Becton-Dickinson Diagnostics, Platform Manager & Lead System Engineer

Led as Platform Manager and Lead System Engineer at Becton-Dickinson Diagnostics, successfully achieving FDA approval and adoption of the platform by Quest Labs.

Macrosonix Inc, Chief Technology & Operations Officer (CTO/COO)

Served as Chief Technology & Operations Officer (CTO/COO) at Macrosonix Inc, overseeing its operations and technology. The company product line was licensed/acquired by DIT and P-K.

Tektronix Inc, Technical Fellow & R&D Director

Held the position of Technical Fellow and R&D Director at Tektronix Inc, where I played a pivotal role in building a division from the ground up, ultimately leading to its successful acquisition by Xerox after achieving \$1B in revenue.

Allied-Signal/Honeywell, Program Manager & Systems Engineer

As F-15 Program Manager and Systems Engineer at Allied-Signal/Honeywell, I made significant contributions to the development of the Environmental Control System concept through flight test phases.

Education & Certifications

Doctorate (PhD) in Mechanical Engineering & Computational Methods

University of Illinois & National Center for Supercomputing (NCSA)

Graduation Year: 1991

Master of Science (MS) in Mechanical Engineering

University of Illinois

Graduation Year: 1988

Master of Science (MS) in Mechanical Engineering

University of Southern California

Graduation Year: 1985

Bachelor of Science (BS) in Mechanical Engineering

University of Washington

Graduation Year: 1982

Certifications/Training:

PMI Agile Certified Practitioner (PMI-ACP)

Agile Scrum Master (PSM)

ISO 27001 Security

Lean/Six Sigma & Design for Six Sigma

Machine Learning (ML) and Artificial Intelligence (AI)

Awards

BIG Business Innovation Award: Recognized for outstanding contributions to innovation in artificial intelligence and machine learning for healthcare and wellness platforms.

SmartCEO Chief Technology Officer (CXO) Excellence Award: Honored for exceptional leadership and achievements in the role of Chief Technology and Operations Officer.

SmartCEO Future 50 and Team Culture Awards: Acknowledged for contributions to organizational growth and fostering a positive team culture.

BD Howe Award for Technology Innovation and Product Market Success: Awarded for outstanding achievements in technology innovation and successfully bringing products to market.

Powder Processing Magazine Cover Article and Best Research at IThERM: Recognized for groundbreaking research and contributions in the field of powder processing, including a cover article in Powder Processing Magazine and Best Research at IThERM.

Tektronix Howard Vollum (Founder's) and President's Awards: Honored with both the Howard Vollum (Founder's) and President's Awards at Tektronix for significant contributions to the division from startup to \$1B revenue.

PC Magazine Technology Excellence Award (Named Recipient): Received PC Magazine's Technology Excellence Award, a testament to your exceptional contributions to the field of technology.

Over 20 Patents: Demonstrating a strong record of innovation and a commitment to intellectual property development.

Professional Society and University Committees & Papers/Presentations: Active involvement in important committees and contributions to academic advisory boards and research programs (OSU, VCU, WNEU, UIUC, VT) and professional societies (IST, ASME, AIAA); numerous published papers and presentations.

Environmental Communities: Long-term board member and active participant in lake management committee; participation in various other environmental and conservation organizations/facilities.