Jason B. Johnson

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PROFESSIONAL SUMMARY

AI software engineer focused on biosecurity and AI safety evaluation. Recent work at RAND spans LLM autograders, biosecurity capability evaluations, and multi-user AI-assisted platforms.

CORE STRENGTHS

• Architect and evaluate large-scale LLM workflows and orchestration systems
• Design and conduct biosecurity-focused AI risk assessments and misuse evaluations
• Build production full-stack web applications across C#, .NET, Python, and Node.js ecosystems
• Engineer advanced agentic AI systems and multi-agent coordination frameworks
• Design and deploy secure, scalable cloud infrastructure across Azure and AWS
• Lead cross-disciplinary collaboration between technical, research, and policy teams

TECHNICAL SKILLS

Languages: C#, Python, C/C++, JavaScript, SQL
Frameworks/Platforms: .Net, Next.js, Docker
AI/LLM: NVIDIA Evo 2 (biological foundation model for DNA sequence interpretation), RFdiffusion (generative diffusion model for protein structure design), autograders, prompt optimization, agent simulation, all major foundation models
Data/Infra: MS SQL, Oracle, MySQL, API-first architectures, serverless hosting

PROFESSIONAL EXPERIENCE

Senior AI Software Engineer / Technology Strategist

The RAND Corporation | Santa Monica, CA | Apr 2024 – Present

• Provided White House-directed support evaluating Llama 405B for biosecurity risks, including advanced cloud architecture and fine-tuning.
• Built autograder optimization workflows for reproducible LLM evaluation in high-stakes biological capability assessments.
• Designed NVIDIA Evo 2 gene-design agent evaluations with structured scoring, Docker sandboxing, and BioPython-based validation.
• Integrated RFdiffusion workflows to generate and assess candidate protein structures with motif and interaction constraints.
• Developed StarRook and GameAIde platforms for serious games, enabling real-time collaboration, AI adjudication, and agent playtesting.
• Built a flexible tabletop game engine and game portal using C#, ASP.NET Core, and Entity Framework for dynamic human+AI gameplay workflows.
• Co-authored RAND report RR-A3797-1 and joined RAND Graduate School's inaugural Master of Technology Policy cohort.

CIO Direct Report – Senior IT Manager, Strategy / Planning / Governance

NASA Jet Propulsion Laboratory | Pasadena, CA | Dec 2021 – Apr 2024

• Led strategy and governance initiatives in a large IT organization supporting mission-critical engineering and business systems.
• Modernized IT governance and application portfolio decision processes across multiple enterprise boards.
• Drove AI-enabled analysis and digital twin concepts for high-complexity operational and planning workflows.
• Partnered with senior technical leaders to align platform investments with long-range mission requirements.

Digital Transformation Strategist

NASA Jet Propulsion Laboratory | Pasadena, CA | Apr 2017 – Dec 2021

• Designed and guided digital transformation initiatives spanning architecture, integration, and analytics.

• Applied semantic and AI technologies to improve search relevance and speed for technical knowledge discovery.
• Delivered executive-ready technical recommendations while coordinating cross-functional engineering teams.
• Led enterprise integration modernization using API-first and event-driven architecture patterns.

Group Supervisor / IT Project Manager / System-Platform Engineer

NASA Jet Propulsion Laboratory | Pasadena, CA | Sep 2003 – Apr 2017

• Progressed from software engineer to supervisor and project leader across middleware, web, and platform engineering.
• Led delivery of complex, multi-datacenter systems and high-availability integration platforms.
• Managed recruiting, mentoring, budgets, and vendor/contract execution for specialized engineering teams.
• Improved delivery consistency through architecture standards, change management, and cross-functional coordination.

Robotics and Flight Software Engineer

NASA Jet Propulsion Laboratory | Pasadena, CA | Mar 1993 – Sep 2003

• Built and tested software used in Mars rover-era flight and mission-support environments, including work associated with Spirit, Opportunity, Curiosity, and Perseverance programs.
• Developed software for rover-critical subsystems, including power and pyro-related modules and communications/performance support tooling.
• Wrote and validated extensive low-level C/VxWorks code and custom hardware drivers for demanding test and integration environments.
• Supported rover field testing in JPL Mars Yard, including command-and-control activities for Rocky 7 research operations.
• Contributed to robotics research projects including robot-assisted microsurgery; co-authored peer-reviewed research.

EDUCATION

• M.S., Information Science – Claremont Graduate University
• B.S., Computer Engineering and Computer Science – University of Southern California

PUBLICATIONS

• Toward Comprehensive Benchmarking of the Biological Knowledge of Frontier Large Language Models (RAND RR-A3797-1), co-author.
• Evaluation of a telerobotic system to assist surgeons in microsurgery (Journal for Computer-Aided Microsurgery), co-author.