**Christopher Burch**  
**Lead Data Scientist | Business Analytics Consultant | Team Leader**  
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**Professional Summary**

Results-driven data science leader with over 10 years of experience leveraging advanced analytics, statistical modeling, and machine learning to drive strategic decision-making across government, healthcare, and private sector initiatives. Proven track record in cross-functional team leadership, systems thinking, and high-impact consulting. Expertise in transforming complex data into actionable insights and developing scalable solutions that improve operations, policy outcomes, and business performance.

**Core Competencies**

* Machine Learning & Predictive Modeling
* Causal Inference & Statistical Analysis
* Data Engineering & Automation
* Business Intelligence & KPI Reporting
* Simulation & Complex Systems Modeling
* Agile Project Management
* Cross-functional Team Leadership
* Stakeholder Engagement & Executive Communication

**Professional Experience**

**The MITRE Corporation** — *Lead Data Scientist*  
*Sep 2022 – Jul 2025*

* Led the design and deployment of data science strategies across multidisciplinary teams; provided technical leadership on machine learning, artificial intelligence, and simulation-based analysis.
* Delivered insights using agent-based modeling, systems dynamics, and statistical inference to support U.S. government agencies in domains including healthcare, transportation, and national security.
* Directed research design, budgeting, and staffing for a high-visibility internal R&D initiative optimizing Veterans Affairs claims processing.
* Built and validated epidemiological and sociological models supporting intervention strategies in public health and defense.
* Developed and maintained enterprise-grade R packages to streamline data pipelines, visualization, and reproducible analysis.
* Mentored junior data scientists and analysts; developed internal training for statistical methods and modeling best practices.
* Supported DARPA’s ASKEM initiative as SME in epidemiological modeling and model evaluation.
* Conducted survey design and analysis for Federal HR and DEIA initiatives, including workforce optimization and accessibility audits.

**Grant Leading Technology** — *Senior Data Scientist & Consultant*  
*Aug 2018 – Sep 2022*

* Served as technical project lead on multiple FAA data initiatives involving over $9B in managed assets and fleet operations.
* Built machine learning models to optimize fleet performance and safety outcomes; influenced FAA-wide policy updates.
* Created open-source R tools to automate compliance reporting, integrate with Federal APIs, and reduce analyst workload.
* Spearheaded the development of a national vehicle recall tracking system, decreasing unresolved safety issues by 90%.
* Applied business process modeling to identify workflow inefficiencies and drive digital transformation recommendations.
* Designed and launched a comprehensive employee performance evaluation framework adopted company-wide.

**Cogentis Therapeutics** — *Co-Founder | Chief Data Officer*  
*Jan 2015 – Jul 2018*

* Directed statistical planning and power analysis for preclinical research; minimized experimental risk and improved ROI.
* Built financial models and strategic plans that secured investment while supporting scientific integrity.
* Authored data SOPs, dictionaries, and quality control documentation to support regulatory compliance and grant success.
* Created data visualizations for executive communications, grant proposals, and investor presentations.

**US Army, 20th Special Forces Group** — *Advanced Skills Instructor*  
*Jun 2009 – Nov 2011*

* Led training for U.S. and allied forces in advanced combat tactics; designed and implemented metric-based training assessments.
* Managed and mentored junior instructors; coordinated logistics, curriculum, and field evaluations.

**US Army, 10th Special Forces Group** — *Communications NCO*  
*Jun 2004 – Jun 2009*

* Conducted over 250 operations in high-risk environments; trained more than 2,000 allied personnel in mission-critical skills.
* Served as communications and operations advisor in multinational counterterrorism efforts across Afghanistan and Africa.

**Technical Skills**

**Languages**: R (expert), Python, Julia, SQL, M, VBA  
**Tools**: Shiny, Git, Spark, Tableau, Excel, Power BI, Linux, Windows  
**Methodologies**: Agile/Scrum, CRISP-DM, Causal Inference, A/B Testing, Systems Thinking

**Education**

**Massachusetts Institute of Technology**  
*Micromasters Certificate, Data, Economics, and Development Policy (DEDP)*

**Johns Hopkins University**  
*MBA, Enterprise Risk Management & Marketing*

* President, Carey Consulting Club

**Arizona State University**  
*BA, Organizational Management*

* Member, SALUTE National Honor Society

**Certifications**

* Data Science Specialization – Johns Hopkins University
* Machine Learning Specialization – IBM
* Lean Six Sigma Yellow Belt
* Certified Risk Analyst (CRA) – Global Academy of Finance & Management

**Publications & Open-Source Contributions**

* **Altfuelr**: CRAN R package for NREL Alternate Fuels Locator
* **Vindecodr**: R interface to U.S. DOT VIN decoder
* **Excelstrippr**: R package for extracting structured data from Excel reports

**Professional Memberships**

* ASTM International – Voting Member, Data Management & Fleet Committees
* Data Science Council of America – Member at Large

**Awards & Recognition**

* **MITRE SPARK Award** – 2023 & 2024
* **MassChallenge Finalist** – 2016 & 2020
* **NIH Neuro Startup Challenge – 1st Place** – 2015
* **FBI Director’s Award for Excellence** – 2014
* **U.S. Army Bronze Star Medal** – 2009