Christopher **Burch**

+1 919 593 2796 | christopher.m.burch@gmail.com | burch-cm | christophermburch

Summary

Data & AI leader with deep expertise in AI/ML, complex systems modeling, and simulation, combined with an MBA and consulting background to translate advanced analytics into measurable business and operational impact.

Experience

The MITRE Corporation

LEAD DATA SCIENTIST *Sep 2022 - Jun 2025*

- Directed the design and implementation of advanced statistical and scientific models to inform interventions within complex, dynamic systems.
- Analyzed large-scale datasets using distributed computing frameworks to build scalable predictive models and generate actionable insights.
- Applied Agile project management as product owner, developer, and team lead on multiple process improvement initiatives.
- Communicated complex analytical results and actionable recommendations to cross-functional and external stakeholders, including agency executives, technical experts, and legislative officials

Grant Leading Technology

DATA SCIENTIST *Dec 2021 - Sep 2022*

- Technical lead for FAA property data visualization, covering more than $9 billion in managed property.
- Applied Agile project management as team lead and developer on federal AI and machine learning projects in fleet management
- Built and managed executive-level dashboards and automated reporting systems to support strategic decision-making for DOT and FAA leadership.

Grant Leading Technology

SENIOR CONSULTANT *Aug 2018 - Dec 2021*

- Technical lead for FAA property data visualization, covering more than $9 billion in managed property.
- Applied Agile project management as team lead and developer on federal AI and machine learning projects in fleet management
- Built and managed executive-level dashboards and automated reporting systems to support strategic decision-making for DOT and FAA leadership.

Cogentis Therapeutics

COFOUNDER / CHIEF DATA OFFICER *Jan 2015 - Jul 2018*

- Led the creation and execution of data security and privacy protocols, leveraging differential privacy methods to protect and anonymize sensitive datasets.
- Conducted statistical power analyses for proposed experimental designs, reducing experimental risk and improving study reliability.

US Army 20th Special Forces Group

ADVANCED SKILLS INSTRUCTOR *Jul 2009 - Nov 2011*

- Senior CQB/Close Combat Instructor for US Army, US Navy, and NATO forces in close quarters combat (CQB), fighting in built-up areas (FIBU), advanced urban combat (SFAUC), and advanced special operations (ASO).
- Conducted unconventional warfare, counterterrorism, and partner-force missions across Latin America to counter transnational treats and strengthen regional security.

US Army 10th Special Forces Group

SPECIAL FORCES COMMUNICATIONS NCO *Jun 2004 - Jul 2009*

- Conducted unconventional warfare and strengthened NATO, European, Afghani, and African partner forces to deter aggression and bolster security across Europe and North Africa.

Technical Skills

Areas of Expertise

COMPLEX SYSTEMS MODELING AND SIMULATION, RESEARCH DESIGN, STATISTICAL ANALYSIS, MACHINE LEARNING, BIG DATA, PROCESS IMPROVEMENT

Languages

R, PYTHON, JULIA, SQL, M, VBA

Software

Spark, Hadoop, Tableau, Git, Shiny

Techniques

Bayesian methods, Agile Software Development, Causal inference

Education

Massachusetts Institute of Technology

MicroMasters Certificate *2015-2017*

- Graduate training in Data, Economics, and Developmental Policy (DEDP)

Johns Hopkins University

Master of Business Administration *2013-2015*

- Double Specialization in Enterprise Risk Management (ERM) and Marketing

Arizona State University

Bachelor of Arts, Organizational Management *2011-2013*

- SALUTE National Honors Society

Current Certifications

Data Science Specialization
Johns Hopkins University

IBM Machine Learning Specialization
IBM

Lean Six Sigma Yellow Belt
Grant Leading Technology

Certified Risk Analyst (CRA)
Global Academy of Finance and Management

Memberships

ASTM International
Voting Member on Subcommittees for Sampling/Statistics, Data Management,
Fleet Management

Data Science Council of America
Member at Large

Awards

The MITRE Corporation
SPARK Award · *2023 & 2024*
- MITRE-internal award recognizing significant contributions and innovation in research.

MassChallenge
Finalist · *2020 & 2016*
- Startup incubator and business model contest. Selected as a Top 20 Finalist, the incubator's highest honor, from more than 500 startups from across the globe.

Neuro StartUp Challenge
1st Place · *2015*
- NIH / Oxbridge - funded competition to develop existing NIH patents.

Wake Forest Business School Business Case Competition
1st Place · *2015*
- Biotech business case competition with Boston Scientific.

Federal Bureau of Investigation
Director's Award for Excellence · *2014*
- First unit outside of the FBI to receive this award.

US Army
Bronze Star Medal · *2009*
- Awarded for combat actions in support of Operation Enduring Freedom (OEF)

Publications

1. Burch, C. (2020). *Altfuelr: An interface to the NREL alternate fuels locator*. `https://CRAN.R-project.org/package=altfuelr`
2. Burch, C. (2020). *Vindecodr: An interface to the US department of transportation VIN decoder*. `https://CRAN.R-project.org/package=vindecodr`
3. Burch, C. (2021). *Excelstrippr: Extracts tabular data from excel reports*. `https://CRAN.R-project.org/package=excelstrippr`