# James Horine

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## PROFESSIONAL EXPERIENCE

**BAYER – Data Science & AI** **April 2020 - Present**

*Applied Science Lead*

Strategic Data Science partner of business stakeholders to architect, evaluate, and integrate new opportunities that power data-driven decision-making across Bayer Crop Science.

- **Solution Architecture & Rapid Prototyping**: Architect and prototype model and analytics solutions to address specific requirements, from proof of concept (PoC) to pre-production.
- **Proposal Management:** Oversees the intake, evaluation, prioritization, and execution of high-impact projects by collaborating with interdisciplinary teams and stakeholders, ensuring alignment with strategic objectives and delivering measurable outcomes.
- **Feasibility Measurement:** Conduct rigorous analyses of proposals to estimate their potential value and alignment with business goals before full-scale implementation.
- **Opportunity Identification:** Proactively engage stakeholders to discern and articulate business needs, translating them into actionable initiatives.
- **Integration and Scaling:** Hand off capabilities for integration into enterprise portfolio, ensuring scalability and alignment with business processes.

*Lead Data Scientist, Program Manager*

Leads cross-functional data science teams delivering forecasting, artificial intelligence, machine learning, and generative AI solutions for global agriculture science research and policy position programs. Leads strategic cross functional projects, aligning technical execution, business objectives, solution architecture, staffing needs, and scoping.

- **Data Science Leadership:** Leads strategic initiatives in forecasting, GenAI, machine learning, and agricultural economics. Directed review across cross-functional teams.
- **Contract Evaluation:** Led vendor and internal stakeholder alignment and engagement evaluating model solutions and architecture.
- **Program Development:** Directed cross-functional programs resulting in novel GenAI policy risk solution, expanded global envirotype model, and architected market share program.

*Data Science Team Lead*

Managed the model science and delivery of a multi-disciplinary R&D team from inception to pipeline activation. Managed the scientific and engineering progress, alignment, and model advancement of Crop Disease Capability pipeline.

- **Machine Learning Innovation:** Developed patented ML algorithms (US20240119542A1) improving predictive model accuracy by +50%.
- **Team Delivery:** Led team developing, architecting, and delivering scientific pipeline responsible for accelerating pipeline solution advancements by 10x to stakeholders
- **Professional Recognition:** Received 2021 Bayer Top Performance Award for exceptional contributions to data science innovation and technical leadership.

**UNITED AIRLINES – Operations Data Science** **May 2019 - April 2020**

*Senior Manager of Data Science*

Led data science team delivering solutions across 10+ business areas. Technical oversight and execution within business objectives, solution architecture, staffing needs, and scoping.

- **Team Leadership:** Led operations data science team delivering across multiple program areas in Contact Centers, Technical Operations, Social, Load Planning, Safety, and Supply Chain.
- **Operational Efficiency:** Led review of predictive models achieving 20% reduction in case closure time while decreasing outbound reimbursement costs per case.
- **Technical Implementation:** Directed development of machine learning model for baggage predictions, saving $150,000 in fuel overages.

**SITO MOBILE – Data Team** **February 2018 - November 2018**

*Senior Data Scientist*

Senior engineering and analytics developer on client pipeline for ad-serve analytics and telemetry.

- **Analytics Innovation:** Developed Brand Momentum Index to measure foot traffic dynamics across all locations for major brands, creating visibility into consumer movement patterns.
- **Location Intelligence:** Architected proprietary geolocation analytics capable of distinguishing between unique visitors and unique visits, enabling advanced customer journey analysis.
- **Technical Development:** Engineered in Scala and Python, building scalable data processing pipelines to handle massive geospatial datasets with exceptional performance.

**GENERAL ASSEMBLY** **June 2017 - October 2018**

*Data Science Instructor*

Instructor and mentor to bootcamp students in industry relevant data science curriculum.

- **Curriculum Leadership:** Updated and delivered comprehensive data science curriculum covering Python, machine learning, time series forecasting, and NLP in bootcamp format.
- **Student Success & Career Development:** Mentored students to achieve measurable career outcomes, advised students on positioning their skills, and championed 1 bootcamp graduate gaining admission to University of Chicago's MSc Data Science program.
- **Technical Instruction & Mentorship:** Delivered hands-on instruction in Python programming and advanced analytics while providing individualized project feedback.

**THE MARKETING STORE** **February 2017 - November 2017**

*Senior Data Scientist*

Senior AI/ML developer for global automotive, quick-serve-restaurant and telecom client needs.

- **Predictive Modeling:** Built machine learning recommendation systems to identify optimal upsell opportunities for global clients' digital and hybrid campaigns.
- **Behavior Simulation Modeling:** Built agent-based models simulating customer behavior patterns from maintenance history and engagement data characterizing upsell scenarios.
- **Engineering Excellence:** Established automated unit testing and scalable data pipelines for core data science functionality, enabling CICD of data science and engineering processes.

**CAPGEMINI** **April 2016 - February 2017**

*Senior Consultant*

Data science developer and for Fortune 500 clients in QSR, Agriculture, and Heavy Industry.

- **Client Strategy Leadership:** Developed data science narratives and strategic frameworks for Fortune 500 clients while managing multiple concurrent POC and full engagement workflows.
- **Advanced Modeling Solutions:** Sales forecasting models for major QSR clients. Tire failure prediction model heavy industrial tires. Machine learning models for crop disease.
- **Technical Innovation:** Developed novel feature ranking methodologies for machine learning model feature contribution and interpretation.

**SPIRALEDGE** **June 2014 - January 2016**

*Applied Data Scientist / ML Researcher*

Multi-disciplinary researcher drawing on experience from NCAA Division 3 Swimming and time series and signal processing. Tested physical product. Designed and collected research grade data.

- **Algorithm Innovation:** Developed novel motion-tracking and analysis algorithms specifically designed for competitive distance-athletes & sports performance analytics.
- **Statistical Methodology:** Engineered new methodologies for motion tracking analysis, advancing biomechanical data interpretation and athlete performance measurement.
- **Performance Validation:** Established new measurement metrics and performance standards through extensive time series analysis and nonparametric classification techniques.

## Education

**Penn State University** **Anticipated completion 2027**

*Doctor of Engineering, Economic Systems and Simulations*

**San Jose State University**

*Master of Science, Statistics*

**University of California, Santa Cruz**

*Bachelor of Arts, Mathematics*

## Open-Source Software Development

**R Library Developer**

- *fastFeatures:* approximately correct feature selection in large feature spaces
- *TidyAgronomy:* scalable modern data science ecosystem for agronomy

## Patents and Publications

**Patent Pending -** *US20240119542A1:* Systems and methods for assessing crop damaging factors associated with agronomic fields

**Working Paper -** *TidyAgronomy:* on the need for scalable frameworks to lower the research barriers

## Talks and Lectures

*Getting Started with Open Source*

**OSTEM**, *Careers in Academic and Industrial Research* 2017 Panelist

**Galvanize SF,** *A Crash Course in Time Series* 2015 Speaker