

JOB SPECIFICATION

DATA SCIENTIST



KANSAS CITY
SYMPHONY





DATA SCIENTIST SUMMARY

Are you an experienced technology pioneer — a solutions builder who embraces the power of data to improve communities? Would you like to be a part of an agile, forward-thinking, ambitious team of people who are seeking to rewrite the book on performing arts marketing? If so, consider joining the Kansas City Symphony, one of America's most innovative major orchestras. We are strong, ambitious, and on the rise.

WHAT DRIVES US?

- Our passion for symphonic music and a fervor to share it
- A commitment to our community and its citizens
- The pursuit of excellence in all facets of our organization
- Creativity to realize our full potential

In order to thrive in this new era, we require a team of remarkable leaders to drive the organization's rise in creative ambition and grow our ability to impact people through music.

An important role we seek to fill on this team is the position of **Data Scientist**. This newly created position, along with a newly created department, will help the Kansas City Symphony become an industry leader in the application of data, analytics, and machine learning in the performing arts. The principal application of this work will be in developing new audiences for symphonic music.

Come along with us into this new era. Explore the Kansas City Symphony.

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ABOUT THE KANSAS CITY SYMPHONY

NATIONAL PROFILE

The Kansas City Symphony is the youngest major symphony orchestra in the United States, and one of the most secure. Since its founding in 1982 by R. Crosby Kemper, Jr., the Kansas City Symphony has grown through artistic vision, fiscal discipline, and a culture of trust and excellence in all facets of the organization.

The Kansas City Symphony serves a metropolitan population of 2.1 million people. The orchestra's 80 full-time musicians contribute to the city's exceptionally strong cultural community. During its 42-week season, the Symphony performs a wide variety of concerts including subscription classical, pops and family, film with orchestra, and educational programs. In addition to symphonic music of all kinds, the Symphony has deep roots in chamber music, and travels Kansas City with a mobile stage — the "Mobile Music Box" — throughout the warmer months. The Kansas City Symphony also performs frequently with the Lyric Opera of Kansas City and the Kansas City Ballet.

DEDICATED LEADERSHIP

The Kansas City Symphony is governed by a Board of Directors under the leadership of Board Chair Patrick McCown and is led by a full-time professional staff led by Executive Director Danny Beckley. In addition, the Kansas City Symphony benefits from the dedicated efforts of its volunteer associations.

The Symphony's four auxiliaries, with total membership of nearly 500, raise more than \$1 million annually, making them some of the most successful orchestra volunteer forces in the nation.

FINANCIAL STRENGTH

The Kansas City Symphony has demonstrated a strong commitment to fiscal discipline in support of artistic ambition. From a budget of \$1.5 million in its first season, the Symphony's annual operating budget has grown to more than \$20 million. More than 1,000 gifts from the Board, local foundations and members of the community have created an endowment in excess of \$125 million. The Symphony's balance sheet is pristine, with healthy operating reserves and working capital. The Kansas City Symphony is debt-free.

A NEW HEADQUARTERS FOR A NEW ERA

In the summer of 2021, the Symphony established a new headquarters, adjacent to the orchestra's world-class concert hall at the Kauffman Center for the Performing Arts. A storied 19th-century icon of Kansas City, this newly modernized space supports the organization's creativity, with space for administrative offices, musician practice, chamber performance, and music education. Formerly a restaurant, the building is complete with a commercial kitchen and an English pub, presenting the Symphony with new opportunities for patron engagement.



The Kansas City Symphony's new headquarters, Shirley Bush Helzberg Symphony House.

MUSIC EDUCATION

The vision of the Symphony's education program is to enable people of all ages in the greater Kansas City area to learn, create, and become inspired through orchestral music. More than 60,000 people participate in Kansas City Symphony education programs annually.

STREAMING AND RECORDING

In 2021, the Symphony launched a new video streaming service available at [MySymphonySeat.org](https://mysymphonyseat.org) and through the Kansas City Symphony app on AppleTV, Roku, Amazon Fire, and other SmartTV and mobile device platforms. Video storytelling will play a key role in audience development, and the Symphony has invested heavily in ramping up this capacity for the future.

The Symphony has successfully partnered with award-winning audiophile label Reference Recordings to produce nine albums: "Shakespeare's Tempest," the Grammy® Award-winning "Britten's Orchestra," an Elgar/Vaughan Williams project, "Miraculous Metamorphoses," an all-Saint-Saëns CD featuring the magnificent "Organ" Symphony, the music of contemporary American composer Adam Schoenberg (nominated for two Grammy Awards), Holst's *The Planets*, the world premiere recordings of Jonathan Leshnoff's Symphony No. 3 and Piano Concerto and, most recently, a recording featuring one-movement symphonies by Barber, Sibelius and Scriabin. A live recording of works by Johannes Brahms is slated for future release.

Highlights of Classical Series performances are broadcast Thursdays at 8 p.m. on 91.9 Classical KC, Kansas City's new classical music radio station.



JOB DESCRIPTION: DATA SCIENTIST

Reports to: Executive Director

The Data Scientist will establish systems, methods, and means to make data core to the Symphony's strategies and daily operations. Working closely with the Executive Director to create a data-driven culture across all facets of the organization, the Data Scientist will be a leader and thought partner in the design and application of data technologies to the Symphony's business.

Inspired by best practices and proven methods from other industries, we seek to pioneer the use of big data to amplify our effectiveness in communicating about music and developing an audience for it. The Data Scientist will develop a data warehouse that will combine disparate sources of data into an entity that can be easily queried and mined. Sources of data for this warehouse will include patron transaction data (ticket purchases and philanthropic contributions), survey data, consumer data, and channel activity from digital platforms and apps.

Using the data warehouse, the Data Scientist will lead the development of descriptive analytics to drive key performance indicators to measure organizational progress in audience development. The Data Scientist will develop predictive analytics using machine learning to inform marketing and communications efforts through customer segmentation, product recommendations, and patron engagement strategies.

Fundamentally, the Data Scientist will develop insights that drive results.



REPRESENTATIVE DUTIES AND RESPONSIBILITIES

The essential duties and responsibilities of the Data Scientist include the following:

BUSINESS APPLICATION AND STRATEGY

Understand business goals and translate them into machine learning use cases and model design. Collaborate across the organization to ensure that efforts toward goals are being maximally supported by data collection and analysis, and refine as needed.

Participate in cross-departmental strategy development and refinement, particularly regarding patron growth.

DATA MANAGEMENT

Design and build an infrastructure to store all structured and unstructured data through a centralized data warehouse and/or data lake using technologies such as AWS, Oracle, or other solutions. Write and maintain hooks from various data sources to keep the data warehouse/lake up to date on an asynchronous but at least daily basis. Ensure data is cleaned to produce reliable output.

Data will come from the following sources, among others:

- Tessitura (SQL backend): An industry-specific CRM that stores all patron information including cultivation and stewardship, patron transactions including ticket sales and donation activity, sales activity, ticketing and admissions, concert and event data, fundraising campaigns, marketing campaigns, and so forth.
- OPAS (Orchestra Planning Administration System): An industry-specific database maintaining performance information such as concert programs, musician rosters, repertoire information, guest artists, program budgets, and orchestra calendar.
- Digital engagement: User-level analytics for KCS websites, social media, video streaming, and apps.
- Retail point-of-sale: Transactions for food and beverage and merchandise sales.
- Third-party consumer information and purchased lists.
- Local and national surveys.

DATA COLLECTION

Work with other departments to enhance means and methods of data collection. Ensure that best practices and technologies are being ethically employed to capture useful information from physical and digital engagements both inside and outside the concert hall. Design and implement organization-wide procedures to standardize data entry from different departments.

DESCRIPTIVE ANALYTICS

Develop descriptive analytics to provide insights on patron-level engagement with KCS, concert program success, audience experience, ticket pricing, marketing and fundraising campaign performance, musician engagement and orchestra service utilization.



MACHINE LEARNING

Develop predictive analytics using machine learning to accomplish tasks like the following:

- Identify market segments and categorize patrons by attendance motivation
- Predict household engagement propensity, and also philanthropic propensity and capacity
- Recommend communications style, timing and tone per household
- Inform programming decisions based on concert repertoire, artists and dates
- Provide related concert recommendations
- Predict ROI of advertising campaigns, forecast future ticket sales, etc.

DATA VISUALIZATION AND STORYTELLING

Collaborating with others, develop compelling visual representations and narratives to tell the stories behind the data. Develop persuasive communications rooted in factual insights gleaned through analysis.

TEAM LEADERSHIP

As data science endeavors bear fruit, recruit and lead a data team of sufficient size to serve the organization's growing needs. Ensure data services support the needs of all stakeholders.

Other duties as assigned.

REQUIRED QUALIFICATIONS

- Master's degree in a quantitative or technical field such as Statistics, Mathematics, Physics, Computer Science or Computer Engineering
- 4 years of experience in a data science role
- Expert level of proficiency with SQL and Python (or R), including the core libraries used by data scientists
- Significant experience with machine learning algorithms including their development, validation, implementation, and launch
- Desire to pursue, acquire and advance best practices in coding, from standpoints of efficiency, readability, precision, and maintainability
- Demonstrable proficiency in basic statistics, linear algebra, and calculus as they relate to machine learning concepts
- Experience with cloud computing to handle big data is a plus, but not required

PROFILE OF THE IDEAL CANDIDATE

The ideal candidate will have an infectious entrepreneurial spirit, grounded in personal integrity. They will be a proven leader with a track record of vastly surpassing expectations by challenging existing assumptions and ways of doing things. They will have a high degree of intellectual curiosity, and a creative bent that inspires new ways of thinking and problem-solving in colleagues. An analytical skillset is absolutely essential, with the ability to look at a challenge from many different angles in order to develop new insights, and the ability to effectively communicate those insights with others.

The ideal candidate will be highly self-aware, and be able to read and respond to verbal and non-verbal cues in others. They will have a commitment to transparency and truth, in a way that both informs and inspires, and will be candid and respectful at the same time. They will not be shy to speak hard truths, nor to inspire action in others to promptly address these truths. They will have an unquestioned ability to handle confidential and sensitive information with care and in an appropriate manner at all times.

They will be able to promptly earn the full trust and confidence of the Executive Director by demonstrating outstanding judgment, technical prowess and utility, creative and strategic thinking, insightful analysis, and consistent management. They will foster a business-like culture of thorough advance planning, assumption testing, transparent monitoring, communicative progress tracking, and consistent, patient, and practiced execution.

They will enjoy working as part of a team, and will welcome the creative challenge of implementing the orchestra's long-term vision through a consistent series of short-term actions and behaviors that balance the artistic, logistical, practical, and financial demands of life in the 21st-century orchestral community.



IN CLOSING...

Kansas City is a remarkable place because of its people, its institutions, and its culture. The Kansas City Symphony is proud to be a contributor to the region's growth and to provide a soundtrack for life in this community.

We are passionate about the power of music to transform lives, and we are seeking the best and brightest in the country to help us do it. If this opportunity sounds compelling to you and you would like to learn more, please e-mail Danny Beckley at dbeckley@kcsymphony.org.

“

We have a wonderful relationship among the administration, the board, and the players. Everyone has unanimously agreed to do something exceptional... It is a golden moment for the Kansas City Symphony.

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—*Michael Stern, Music Director*

The Kansas City Symphony is an Equal Opportunity Employer.





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