Lead Solutions Design Engineer

**Working at Amazon Robotics**
Are you inspired by invention? Is problem solving through teamwork in your DNA? Do you like the idea of seeing how your work impacts the bigger picture? Answer yes to any of these and you’ll fit right in here at Amazon Robotics. We are a smart team of doers that work passionately to apply cutting edge advances in robotics and software to solve real-world challenges that will transform our customers’ experiences in ways we can’t even image yet. We invent new improvements every day. We are Amazon Robotics and we will give you the tools and support you need to invent with us in ways that are rewarding, fulfilling and fun.

**Job Overview**
The Solutions Design Team is searching for an innovative and solutions oriented engineer to help design our next generation Amazon Fulfillment Centers (FCs). A successful candidate will have a passion for creating high-performance physical systems, a strong technical problem solving ability, excellent project management skills, the ability to effectively communicate with and influence decision-makers at all levels and an internal motivation to deliver results in a fast-paced and often ambiguous environment. Amazon Robotics culture encourages innovation and expects engineers and managers alike to take a high level of ownership in solving complex problems.

The Solutions Design Team is not only responsible for analyzing and optimizing existing Robotic FC performance, but combining those learnings with the latest technologies to design new state of the art robotic material handling systems.

As a Solutions Design Engineer, you will:
- Evaluate and create physical processing and material handling solutions using cutting edge technology, robotics and data analytics to meet the product flow requirements based on Amazon design principles.
- Identify and analyze key operational and financial metrics as part of program and feature selection in order to drive smart decisions.
- Coordinate with systems and operations engineering teams to develop product features and optimize the performance of the FCs.
- Manage multiple projects and tasks simultaneously and effectively influence, negotiate, and communicate with internal and external business partners, contractors and vendors.
- Develop models as required to solve complex problems.

**Basic Qualifications**
- Bachelor’s degree in engineering, operations, or a related field + 5 years of experience, or Master’s degree in engineering, operations, or a related field and at least 3 years of progressively responsible experience.
- 3+ years of experience as an industrial engineer, process engineer, systems engineer, manufacturing engineer, project manager or related occupation.
• Experience using MS Excel, MS Project, AutoCAD and commercial off the shelf technologies such as Tableau, SQL, etc.

Preferred Qualifications

• Experience working with the designs of complex automated material handling equipment and systems including robotics and high-speed manufacturing.
• Demonstrated use of analytical skills to solve complex engineering problems
• Experience with process design based on Lean Principles.

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Data Engineering Lead

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**Job Overview**
The Amazon Robotics Data Science & Data Engineering team discovers insights in vast and varied robotic data to help our engineering teams understand how their technologies operate across Amazon’s network of warehouses. We collaborate with designers, software and hardware engineers, and operations teams to understand product requirements, make feature trade-offs, design, and operate new applications of Amazon Robotics technology. We conduct relevant, insightful analysis and communicate the results through white papers and presentations. Our methods include design of experiments, statistical modeling, machine learning, financial analysis, and data visualization.

As an Amazon Data Engineering Lead, you will be working in one of the world's largest data warehouse environments. We are passionate about building a highly scalable big data system to support our analytics, machine learning, and data applications and seek a leader who can help architect a technology development data platform, support the development of experimentation tools and diagnostic predictive pipelines.

A successful candidate should have a background in business analytics, data science, data visualization, and data engineering. We are looking for jack-of-all-trades that are able to select and use the right tools to bring clarity to complex questions and help drive decisions. While we don’t assume mastery in all areas, successful team members can speak and work competently in multiple domains.

**Basic Qualifications**
- Masters degree or higher in a quantitative/technical field (e.g. Computer Science, Statistics, Engineering)
- Design, creation, management, and business use of large datasets
- Proficiency in at least one modern programming language such as Java, Scala, or Python
- Knowledge of data management fundamentals and data storage principles
- Knowledge of distributed systems as it pertains to data storage and cloud computing
- Experience working with Open Source Big Data tools (Parquet, Spark, Hadoop, Presto)
- Experience in working and delivering end-to-end projects independently
- Strong problem-solving skills and ability to prioritize conflicting requirements.
- Excellent written and verbal communication skills and ability to succinctly summarize key findings.
• Comfortable working as both part of a high-performing, diverse team and as an independent performer.
• Ability to multitask and prioritize critical tasks and conflicting requirements with a high attention to detail.

**Preferred Qualifications**

• 5+ years of relevant experience in one of the following areas: Data engineering, database engineering, business intelligence or business analytics
• Experience working with AWS Big Data Technologies (EMR, Redshift, S3)
• Proven track record of delivering a big data solution
• Experience working with both Batch and Real Time data processing systems
• Proven success in communicating with users, other technical teams, and senior management to collect requirements, describe data modeling decisions and data engineering strategy
• Experience providing technical leadership and mentoring other engineers for best practices on data engineering
• Knowledge of software coding practices across the development lifecycle, including agile methodologies, coding standards, code reviews, source management, build processes, testing, and operations
• Experience with JavaScript or supporting similar web platform

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Data Scientist

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**Job Overview**  
The Amazon Robotics Data Science (AR-DS) team discovers insights in vast and varied robotic data to help our engineering teams understand how their technologies operate across Amazon’s network of warehouses. We collaborate with designers, software and hardware engineers, and operations teams to understand product requirements, make feature trade-offs, design, and operate new applications of Amazon Robotics technology. We conduct relevant, insightful analysis and communicate the results through white papers and presentations. Our methods include design of experiments, statistical modeling, machine learning, financial analysis, and data visualization.

A successful candidate should have a background in business analytics, data science, data visualization, and data engineering. We are looking for jack-of-all-trades that are able to select and use the right tools to bring clarity to complex questions and help drive decisions. While we don’t assume mastery in all areas, successful team members can speak and work competently in multiple domains.

**Basic Qualifications**  
- 2+ years of experience in a relevant field
- Strong problem-solving skills and ability to prioritize conflicting requirements.
- Excellent written and verbal communication skills and ability to succinctly summarize key findings.
- Comfortable working as both part of a high-performing, diverse team and as an independent performer.
- Experience programming in analytical workbooks (Python, Java, Scala, R, bash).
- Experience in data mining using databases in a business environment with large-scale, complex datasets.
- Good working knowledge of applied statistics, machine learning, and experimental design.
- Good knowledge of SQL and working with relational databases.
- Willingness to travel 15% of the year.
Preferred Qualifications

- Familiarity with machine and process reliability, integration of human and automated processes, distribution or fulfillment center operations, software/firmware development, or database administration.
- Knowledge of data visualization software (QuickSight, Tableau).
- Experience using cloud storage and computing technologies such as Spark, Hive, Hadoop, and AWS.

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Solutions Analytics Engineer

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**Job Overview**
The Amazon Robotics Data Science team uses data science, business analytics, and experimentation to drive decisions for Solutions Designers, Product Development, and Operations teams. Our analyses support the design and deployment of new technology and FC designs. We have four analytic competencies: Strategy, Concept, Design, and Validation/Production.

Strategy defines the business case for future areas of technology investment. Concept uses data to drive technology decisions regarding new and disruptive technologies prior to alpha experimentation. Design provides inputs required for new fulfillment center and other solution designs, ensuring that they satisfy key capacity requirements. Validation and Production includes design of experiments (DOE), evaluation of emerging technologies from alpha experimentation through final beta validation, and characterization of KPIs following deployment.

A successful candidate will be interested in contributing data analytics & engineering in at least two of these competencies. In this role, you will collaborate with Designers, Software and Hardware, and Operations teams to understand product requirements, make feature trade-offs, design, and operate new applications of Amazon Robotics technology. We conduct relevant, insightful analysis and communicate the results through white papers and presentations.

**Basic Qualifications**
- Masters in Computer Science, Industrial Engineering, Operations Management, Management Information Systems, or a related field.
- 6+ years of experience in a relevant field
- Strong problem-solving skills and ability to prioritize conflicting requirements.
- Excellent written and verbal communication skills and ability to succinctly summarize key findings.
- Comfortable working as both part of a high-performing, diverse team and as an independent performer.
- Ability to multitask and prioritize critical tasks and conflicting requirements with a high attention to detail.
- Experience with big data and object oriented programming languages (Python, Ruby, Perl, Java, etc.).
• Experience in data mining using databases in a business environment with large-scale, complex datasets.
• Good working knowledge of applied statistics and machine learning techniques.
• Good knowledge of SQL and working with relational databases.
• Ability to design and conduct rigorous experiments on the effectiveness and efficiency of different technologies that will inform long term strategy.
• Willingness to travel 15% of the year.

Preferred Qualifications
• Familiarity with distribution or fulfillment center operations, software/firmware development or database administration.
• Knowledge of data visualization software (Microstrategy, Tableau)
• Experience using Cloud Storage and Computing technologies such as AWS RedShift, RDS, Hadoop etc.

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Data Engineer

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**Job Overview**
The Amazon Robotics Analytics and Experimentation team is a group of talented data engineers & data scientists that empower our fellow roboticists to make data-driven decisions. As an Amazon Data Engineer, you will be working in one of the world’s largest data warehouse environments. We are passionate about building a highly scalable big data system to support our analytics, machine learning, and data applications.

**Basic Qualifications**
- Bachelor’s degree or higher in a quantitative/technical field (e.g. Computer Science, Statistics, Engineering)
- Design, creation, management, and business use of large datasets
- Proficiency in, at least, one modern programming language such as Java, Scala, or Python
- Knowledge of data management fundamentals and data storage principles
- Knowledge of distributed systems as it pertains to data storage and cloud computing
- Experience working with Open Source Big Data tools (Parquet, Spark, Hadoop, Presto)
- Experience in working and delivering end-to-end projects independently

**Preferred Qualifications**
- Relevant experience in one of the following areas: Data engineering, database engineering, business intelligence or business analytics
- Experience working with AWS Big Data Technologies (EMR, Redshift, S3)
- Proven track record of delivering a big data solution
- Experience working with both Batch and Real Time data processing systems
- Proven success in communicating with users, other technical teams, and senior management to collect requirements, describe data modeling decisions and data engineering strategy
- Experience providing technical leadership and mentoring other engineers for best practices on data engineering
- Knowledge of software coding practices across the development lifecycle, including agile methodologies, coding standards, code reviews, source management, build processes, testing, and operations
- Experience with JavaScript or supporting similar web platform

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Data Scientist – Performance Profiling

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**Job Overview**
The Amazon Robotics (AR) Virtual Systems Profiling team builds models, runs simulation experiments and delivers analyses that are central to understanding performance of the entire AR system, e.g. operational and software scaling characteristics, bottlenecks, robustness to “chaos monkey” stresses -- we inform critical engineering and business decisions about Amazon’s approach to robotic fulfillment. We seek a talented and motivated engineer to tackle broad challenges in system-level analysis. You will work in a small team to quantify system performance at scale and to expand the breadth and depth of our analysis (e.g. increase the range of software components and warehouse processes covered by our models, develop our library of key performance indicators, construct experiments that efficiently root cause emergent behaviors). You will engage with growing teams of software development and warehouse design engineers to drive evolution of the AR system and of the simulation engine that supports our work.

**Basic Qualifications**
- Masters degree in Data Science, Statistics, Operations Research, or in highly quantitative field (e.g. Computer Science, Operations Research, Systems Engineering, Physics), or equivalent experience
- 2+ years of industry experience in predictive modeling, data science and analysis
- Programming experience in Python, R or equivalent
- Demonstrated experience in data science and data analysis
- Desire to pursue challenging questions through extensive operational and data analysis (experience to do data analysis, regression analysis)
- Demonstrated outstanding written and verbal communication skills
- Experience giving data presentations with graphical or data visualization tools

**Preferred Qualifications**
- Relevant experience in one of the following areas: Data engineering, database engineering, business intelligence or business analytics
- Experience working with AWS Big Data Technologies (EMR, Redshift, S3)
- Proven track record of delivering a big data solution
- Experience working with both Batch and Real Time data processing systems
- Proven success in communicating with users, other technical teams, and senior management to collect requirements, describe data modeling decisions and data engineering strategy
- Experience providing technical leadership and mentoring other engineers for best practices on data engineering
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