

DUTY STATEMENT

		EFFECTIVE DATE
BRANCH Technology Services	POSITION NUMBER (Agency – Unit – Class – Serial) 815 - 626 - 1414 - 907	
DIVISION/UNIT Enterprise IT Solutions & Innovation/Data Solutions Services	CLASS TITLE Information Technology Specialist II	
INCUMBENT NAME Vacant	WORKING TITLE Senior Data Solution Engineer	
CalSTRS is dedicated to securing the financial future and sustaining the trust of California's educators through customer service, accountability, leadership, strength, trust, respect, and stewardship.		
Under the general direction of the Manager of Data Solution Services (IT Manager I), the Information Technology Specialist II, in collaboration with Business Intelligence & Data Analytics team, operates as the Senior Data Solution Engineer. This position is pivotal for the administration and operation of databases and data warehouses. The incumbent performs a wide variety of tasks requiring innovative problem-solving where guidance is not readily available, such as data transformation, designing and developing data warehousing solutions, executing data science tasks, developing cloud applications, implementing DevOps practices, and integrating systems within the CalSTRS cloud ecosystem. The incumbent will collaborate closely with architects, business analysts, developers, testers, infrastructure engineers, and other IT personnel to ensure seamless operation and innovation.		
% of time performing duties	Indicate the duties and responsibilities assigned to the position and the percentage of time spent on each. Group related tasks under the same percentage with the highest percentage first.	
30%	ESSENTIAL FUNCTIONS <u>Database and Data Warehouse Administration & Operation</u> - Technical lead for database and data warehouse administration and operation. - Install and configure database server management software, client tools, and utilities. Automate database and data warehouse administration by creating event-driven triggers, writing stored procedures and scripts, and creating scheduled jobs and tasks. - Maintain the integrity and security of databases, data warehouses, and data marts. - Implement database and data warehouse structural changes. Performs database and warehouse migrations to test and production environments. Conducts post-implementation evaluations. - Develop database and warehouse backup and recovery tasks. - Evaluate and analyze the impact of growth on performance of database servers. Leads disaster recovery planning and testing activities. - Administer and manage data warehouses, handles user access control, processes data warehouse-related tickets, enforces data masking and row-level security, and manages resource usage monitoring via system views or related tools. Monitors query performance of data warehouses and DataMart. - Design and implement data warehouse architecture. Design and implement data masking and row-level security and manage resource usage monitoring via system views or related tools. - Monitor query performance of data warehouses and DataMart.	
25%	<u>Data Analytics and Data Science</u> - Collect, clean, and preprocess data from various sources. - Analyze data to identify distributions, trends, and anomalies. - Create dashboards and visualizations with Power BI or Python. - Write and optimize SQL queries for efficient data manipulation. - Engineer features for machine learning models. - Build and evaluate predictive models using machine learning. - Generate reports and communicate insights to stakeholders. - Stay updated on data science tools, algorithms, and best practices. - Design and develop logical and physical data models for SQL and BI reports. - Translate business requirements into technical specifications. - Use AI technologies and cloud services for business innovation. - Develop data architecture strategies, standards, and procedures.	

25%	<u>Cloud Application and ETL Development</u> • Design, develop, and maintain the cloud-based applications and solutions including front-end modules, back-end services, and cloud microservices. • Provide technical expertise and hands-on skills & experience on CalSTRS' cloud computing solutions, Generative AI applications, innovation, and cloud-related projects and initiatives. • Design system architectures, security zones, governance policies, and work plans for cloud services solutions implementation and integration. • Design, build, implement cloud-based web applications with cloud managed services (e.g. AWS, Azure) including but not limited to Compute, Storage, Security, Identity, Compliance, Database, Management and Governance, Networking, and CI/CD services. • Integrate applications with cloud IAM solutions for authentication and authorization (e.g. Azure AD, AWS Directory Service/Cognito). • Design, develop, and maintain DevOps and release management. • Design, develop, or maintain DevOps and release management. • Build and Deploy the ETL data pipelines across Dev, SIT, UAT, and PROD cloud environments. • Create scripts for automation to streamline and optimize the cloud deployment processes. • Monitor data pipelines to identify and resolve data quality issues proactively.
15%	<u>Prompt Engineering and AI/ML data solutioning</u> • Design and optimize prompts to guide large language models (LLMs) for specific business or technical use cases. • Develop reusable prompt templates and frameworks for consistent and scalable AI interactions. • Collaborate with data engineers to integrate prompt-based solutions into AI/ML pipelines. • Analyze model outputs for accuracy, bias, and performance, and iterate on prompt strategies accordingly. • Build and maintain datasets for training, fine-tuning, and evaluating AI/ML models. • Design data pipelines and workflows to support machine learning model development and deployment. • Ensure data quality and integrity through validation, cleansing, and transformation processes. • Implement responsible AI practices by monitoring ethical risks in both data and model outputs. • Document prompt logic, data schemas, and solution architectures for transparency and reproducibility. • Support cross-functional teams by translating business requirements into AI/ML-driven solutions.
5%	MARGINAL FUNCTIONS Promote and advance productivity, innovation, and change management of Technology Services as a role model. Provide presentations, workshops, and demo to share cloud development skills and best practices.

COMPETENCIES

Core Competencies. All employees are responsible for understanding and demonstrating CalSTRS' core competencies:

- Adaptability/Flexibility
- Communication
- Customer/Client Focus
- Teamwork
- Work Standards/Quality Orientation

Classification Competencies. All employees are expected to understand and demonstrate their position's CalSTRS class competencies located in the [Competency Guide](#) on Central.

CONDUCT AND ATTENDANCE EXPECTATIONS

- Communicate effectively with individuals from varied experiences, perspectives and backgrounds
- Deal with individuals in a tactful, congenial, personable manner
- Must maintain consistent and regular attendance
- Adhere to CalSTRS policies and procedures
- Support and model CalSTRS Core Values

815-626-1414-907

WORKING CONDITIONS AND PHYSICAL ABILITIES REQUIRED OF THE JOB

- Prolonged periods of standing or sitting
- Work in a high-rise building, in an open space environment
- Ability to use a computer keyboard several hours a day
- Read from computer screens several hours a day
- Ability to move up to 10 pounds

Responsible for promoting a safe and secure work environment free from discrimination, harassment, inappropriate conduct, or retaliation by adhering to CalSTRS' policies and processes. Responsible for participating in mandated HR or EEO training workshops (i.e. Sexual Harassment, EEO, etc.).

To be reviewed and signed by the supervisor and employee:**SUPERVISOR'S STATEMENT:**

- I HAVE DISCUSSED THE DUTIES AND RESPONSIBILITIES OF THE POSITION WITH THE EMPLOYEE
- I HAVE SIGNED AND RECEIVED A COPY OF THE DUTY STATEMENT

SUPERVISOR'S NAME (Print)

SUPERVISOR'S SIGNATURE

DATE SIGNED

EMPLOYEE'S STATEMENT:

- I HAVE DISCUSSED THE DUTIES AND RESPONSIBILITIES OF THE POSITION WITH MY SUPERVISOR
- I HAVE SIGNED AND RECEIVED A COPY OF THE DUTY STATEMENT
- I AM ABLE TO PERFORM THE ESSENTIAL FUNCTIONS LISTED WITH OR WITHOUT REASONABLE ACCOMMODATION
- I UNDERSTAND THAT I MAY BE ASKED TO PERFORM OTHER DUTIES AS ASSIGNED WITHIN MY CURRENT CLASSIFICATION, INCLUDING WORK IN OTHER FUNCTIONAL AREAS AS BUSINESS NEEDS REQUIRE

EMPLOYEE'S NAME (Print)

EMPLOYEE'S SIGNATURE

DATE SIGNED