


Department of Health Care Access and Information
Duty Statement
Proposed

Employee Name Vacant	Organization Office of Health Workforce Development Research and Evaluation Branch Workforce Research and Analytics Section	
Position Number 441-301-5758-XXX	Telework Option Hybrid	
Classification Research Data Specialist II	Working Title Workforce Modeling Specialist	
Supervision Exercised None	Location Sacramento	
Conflict of Interest: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Fingerprint/Live Scan: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Revision Date 4/28/2026	Effective Date	

Mission and Vision

HCAI is a leader in collecting data and disseminating information about California's healthcare landscape, promoting an equitably distributed health workforce, and publishing valuable information. The Department does this through five program areas - Affordability, Workforce, Data, Facilities, and Financing.

HCAI's mission is to expand access to quality, equitable, affordable health care for all Californians by supporting high-value delivery systems, resilient health facilities and workforces, and actionable health information and strategies.

HCAI's vision is a healthier California where all receive equitable, affordable, and quality health care.

General Description

The Workforce Modeling Specialist serves as a senior technical practitioner and advisor responsible for designing, building, and maintaining workforce supply and demand models that inform the Department of Healthcare Access and Information's (HCAI) strategic planning and policy decisions. This role leads the full modeling lifecycle, from automated data extraction and exploratory analysis through data wrangling, feature engineering, model development, evaluation, and deployment. Working primarily in Python (PySpark, scikit-learn, matplotlib) with SQL for data exploration and transformation, the Workforce Modeling Specialist builds robust, scalable, and well-documented forecasting models, using Git and GitHub for version control and collaborative code review. The position applies advanced statistical and machine learning methods, including regression, classification, and unsupervised techniques, to improve projection accuracy, capture emerging workforce trends, and support scenario-based planning.

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The Workforce Modeling Specialist also deploys and manages models in cloud environments such as Databricks, applying Machine Learning Operations (MLOps) best practices and partnering with IT to automate data pipelines and integrate modeling outputs into HCAI's analytics infrastructure. Beyond technical modeling, the Workforce Modeling Specialist leads complex research projects that assess workforce gaps and support equitable access to healthcare providers, particularly in underserved communities. The Workforce Modeling Specialist communicates findings through reports, visualizations, and presentations tailored to decision-makers, policy teams, and the public, clearly articulating model assumptions and limitations so that results can be responsibly applied to policy and program decisions.

Essential Job Functions

40% Workforce Supply and Demand Modeling

Design, maintain, and continuously enhance advanced supply and demand forecasting models that support HCAI's strategic priorities. Build, revise, and document robust, scalable models in Python using libraries such as PySpark, scikit-learn, and matplotlib, with Git and GitHub for version control and collaborative code review. Apply machine learning techniques, including regression, classification, and unsupervised methods, to improve accuracy, capture emerging trends, and enable scenario-based planning. Execute the full modeling lifecycle, including automated data extraction, exploratory data analysis, data wrangling, training dataset construction, feature engineering, model evaluation, and selection using appropriate performance metrics. Refactor and optimize existing code for clarity, modularity, and performance; conduct code reviews; and maintain thorough documentation to ensure reproducibility and support cross-team collaboration. Clearly communicate model assumptions, limitations, and sources of uncertainty to technical and non-technical stakeholders. Collaborate with internal and external partners, including subject matter experts, to refine modeling methodology, validate assumptions, and strengthen implementation.

20% MLOps and Automated Data Pipelines

Partner with IT and data engineering teams to build and maintain automated data pipelines and integrate modeling outputs into HCAI's analytics infrastructure. Deploy, monitor, and manage models in cloud environments such as Databricks, applying MLOps best practices for reproducibility, scalability, and ongoing model performance. Apply foundational data engineering concepts, including the distinction between data lakes and data warehouses, star schema design, unique key enforcement, and appropriate use of join logic. Follow software engineering principles such as DRY, modular design, and performance-aware coding to produce maintainable, efficient solutions. Use Python and SQL proficiently for data exploration, quality checks, and transformations across large, complex datasets.

20% Health Workforce Research

Plan and execute research projects that examine healthcare workforce trends, identify provider shortages in areas of unmet need, and uncover opportunities to expand

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participation of underrepresented groups in the healthcare workforce. Collaborate with the Office of Healthcare Workforce Development's (OHWD) Policy Team and subject matter experts to scope research questions, develop research protocols, select appropriate methods (such as forecasting, statistical analysis, and surveys), and identify relevant data sources. Serve in a lead capacity by directing the work of other staff, reviewing analytical products, and ensuring research quality and rigor.

10% Data Validation and Provisioning

Liaise with state agencies, licensing boards, and other partner organizations to identify, collect, analyze, and report healthcare workforce data. Develop data models to guide collection activities, apply research methods to clean and normalize data, and design logic checks to ensure accuracy, completeness, and consistency. Partner with HCAI's Information Technology Services to automate data ingestion, normalization routines, and validation checks within production data pipelines.

Marginal Job Functions

10% Communicate respectfully and collaboratively with colleagues, stakeholders, and partners across technical and non-technical audiences. Work independently and resourcefully, taking initiative to build solutions from scratch and navigate ambiguity with minimal supervision.

Desirable Qualifications

- Experience designing, building, evaluating, and maintaining workforce supply and demand models using Python, SQL, and machine learning methods
- Experience applying data management and MLOps practices to support model development, deployment, and maintenance
- Experience leading applied research efforts and contributing to end-to-end analytical projects\Demonstrated ability to collaborate with subject matter experts and partners to inform modeling assumptions and research design
- Ability to communicate technical findings clearly to policy, executive, and public audiences

Physical Demands

Must possess and maintain sufficient strength, agility, endurance, and sensory ability to perform the duties contained in this duty statement with or without reasonable accommodation.

Working Conditions

Requires prolonged sitting, use of telephone and computer, frequent contact with employees and the public. Some travel may be required. The standard work schedule is between 8:00 a.m. to 5:00 p.m., Monday through Friday.

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Employee Statement

I have reviewed and discussed the duties and responsibilities of this position with my supervisor and have received a copy of this duty statement.

Employee Name	Employee Signature	Date Signed

Supervisor Statement

I have discussed the duties of this position with and have provided a copy of this duty statement to the employee named above.

Supervisor Name	Supervisor Signature	Date Signed