



# Government jobs of the future

What will government work look like  
in 2025 and beyond?

## About the authors

**LIBBY BACON** has more than 20 years of experience leading large-scale organizational change management efforts across the government sector. She leads Deloitte's Organizational Transformation practice across Government and Public Services. Her work includes a focus on organizational change management, talent, learning, employee engagement, and culture. She is based in Harrisburg, Pennsylvania. Connect with her on LinkedIn at [www.linkedin.com/in/libby-bacon-pmp-245518b/](http://www.linkedin.com/in/libby-bacon-pmp-245518b/).

**WILL ARNOLD** is a managing director in Deloitte Consulting LLP's Government & Public Services practice with more than 15 years of experience. Arnold is also Deloitte's asset leader for GoCase, a suite of configurable applications focused on mobile case management, leveraging innovative technology such as VR to create immersive learning experiences. Arnold is based in Pittsburgh. Connect with him on LinkedIn at [www.linkedin.com/in/willarnoldiv/](http://www.linkedin.com/in/willarnoldiv/).

**MICHAEL WALSH** is a manager in Deloitte Consulting LLP's Government & Public Services practice and has more than eight years of experience working with state and local government clients driving large business transformations. Walsh also serves as the champion for Deloitte's ChangeScout solution, the firm's organizational change management platform. Walsh is based in Chicago. Connect with him on LinkedIn at [www.linkedin.com/in/michael-j-walsh-81422322/](http://www.linkedin.com/in/michael-j-walsh-81422322/).

**GABE GRAB** has more than 12 years of experience helping health and human services organizations gain insight and transparency into one of their most important assets: their information. He brings extensive subject matter experience supporting analytics initiatives as well as strong technical experience working with an array of analytics tools sets. Grab is based in Harrisburg, Pennsylvania. Connect with him on LinkedIn at [www.linkedin.com/in/gabe-grab-56798120](http://www.linkedin.com/in/gabe-grab-56798120).

**TIFFANY FISHMAN** is a senior manager with the Deloitte Center for Government Insights. Her research and client work focuses on how emerging issues in technology, business, and society will impact organizations. She has written extensively on a wide range of public policy and management issues, from health and human services reform to the future of transportation and the transformation of higher education. Fishman is based in Arlington, Virginia.

**AMRITA DATAR** is a researcher with the Deloitte Center for Government Insights. Her research focuses on emerging trends at the intersection of technology, business, and society and their influence on the public sector. Her previous publications cover topics such as customer experience, digital transformation, innovation, and future trends in government. She is based in Toronto, Canada, and can be reached on Twitter @Amrita07.

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Today's business challenges present a new wave of HR, talent, and organization priorities. Deloitte's Human Capital services leverage research, analytics, and industry insights to help design and execute critical programs from business-driven HR to innovative talent, leadership, and change programs.

## Contacts

**David Parent**  
Principal, Human Capital  
Deloitte Consulting LLP  
+1 313 396 3004  
[dparent@deloitte.com](mailto:dparent@deloitte.com)

**Libby Bacon**  
Principal, Organizational Transformation  
Deloitte Consulting LLP  
+1 717 695 5317  
[elbacon@deloitte.com](mailto:elbacon@deloitte.com)

**Will Arnold**  
Managing director, Government & Public Services  
Deloitte Consulting LLP  
+1 412 338 7960  
[wiarnold@deloitte.com](mailto:wiarnold@deloitte.com)

**Kenneth J. Smith**  
Human Service Transformation leader  
Principal, Deloitte Consulting LLP  
+1 404 202 1026  
[kensmith@deloitte.com](mailto:kensmith@deloitte.com)

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# DATA ENGINEER



# DATA ENGINEER

## Summary

Health and human services (HHS) organizations are actively working to adopt emerging analytics and artificial intelligence capabilities to improve outcomes, increase efficiency, and enhance strategic decision-making.

Data engineers work side by side with stakeholders from different divisions within the department to understand their key objectives and pain points and how data analytics can help address them. After developing a set of hypotheses to test, data engineers assemble the data and the team to conduct the analysis, oversee the analysis, and brief key stakeholders on the key insights.

Data engineers work with teams of data scientists, policy analysts, and program leaders to process large and complex datasets and deliver insights for the organization. They blend deep technical data science capabilities with business domain knowledge and digital design expertise to conceptualize and lead the execution of data projects and applications for various programs.

Data engineers are deployed where their expertise is most needed. They help achieve business goals and objectives through advanced analytics, combining mathematical and computational skills with policy and programmatic backgrounds. They work on a number of areas across HHS programs—deploying risk analytics in child welfare and program integrity; conducting data analysis to understand and predict policy impacts; and implementing smart workload routing solutions for caseworkers.

## Responsibilities

- Data analysis and visualization
- Designing and executing new data and analytics projects
- Working with stakeholders to understand problems, needs, and objectives, and proposing technology and analytics solutions
- Staffing and managing analytics projects
- Collaborating with data scientists, policy analysts, and program specialists to build, deploy, and test solutions

## Time spent on activities





# STUART MADDEN

## DATA ENGINEER

Wisconsin Department of Children and Families | Milwaukee, Wisconsin

Data engineers bring data-driven insights to all facets of HHS's mission.

### Experience

#### Data engineer

Wisconsin Department of Children and Families  
2021-present

#### Economic analyst

Pew Research Center  
2017-2019

#### Intern

Bureau of Labor Statistics  
2016-2017

### Education

#### Georgia Tech

Master of science (computer science)  
2019-2021

#### University of Michigan

Bachelor of arts (economics)  
2013-2017

### Other certifications

- R, Python, SAS, SPSS, Oracle
- Udemy  
Life coaching certificate
- edX  
AI for the social sciences
- MIT Online  
Analytics strategy design

### Top skills

#### HUMAN

Managing others



Critical thinking



Problem-solving



Communication



Partnering for impact



#### TECH

Data visualization



Data processing and management



Analytics software



Data governance



Machine learning



# TOOLBOX

THE TOOLBOX SUPPORTS THE WORKER AS A WHOLE—IN ACHIEVING EXTERNAL OUTCOMES SUCH AS PRODUCTIVITY AS WELL AS INTERNALLY FOCUSED ONES SUCH AS WELLNESS AND PERSONAL DEVELOPMENT.

## Productivity

### Integrated project dashboard

This dashboard and management system uses cognitive computing to help data engineers track and manage staffing and progress for all ongoing projects, prioritize tasks, and assign timelines and resources.

### Smart voice assistant

This voice-based smart assistant helps data engineers stay productive throughout the day. They can use the assistant to schedule appointments, find answers to project-related questions, or type up project notes using a voice command.

## Data tools

### Data management system

A master system that pulls and manages data from a variety of sources for project and application use.

### Digital workforce suite

This suite of digital tools helps data engineers and their teams process data faster:

- Auto-test: Automates functional test cases
- D-lineator: Uses algorithms to automate data mapping
- Botomatica: Generates data-migration code
- Intellitest: Automates outcome-driven test scenarios

## Decision-making

### i-Match

This tool helps match the skill set and experience requirements for a project role with those of potential job applicants and available staff. It helps streamline staffing and recruiting decisions.

## Collaboration

### Ask me anything

This tool crowdsources and aggregates tacit knowledge and work tips from employees across the organization and makes the information available via a chatbot-powered searchable database.

### HHS connect

This tool connects human services professionals across the department. It allows for better collaboration, information-sharing, and coordination of strategies around specific projects or goals.

### Comms suite

This set of collaboration and telecommunication tools allows the data engineer and their project teams to work together seamlessly across locations. They can hold virtual meetings and regular stand-ups, as well as perform tasks and review content collaboratively.

## Training

### Skills U

A personalized digital learning platform that offers self-paced learning on-demand. The platform includes access to MOOCs, microlearning, micro degrees, agency training, in-person workshops, and seminars.

## Well-being

### Wellness manager

This mobile app tracks projects, hours worked, travel and commuting time, vacation, training, exercise (self-reported), daily steps taken, and more. It helps users balance workloads and flags those at risk of overwork. It also uses gamification to nudge users to adopt healthy behaviors.

# A DAY IN THE LIFE

09:00 AM

At his workspace, Stuart logs into the integrated project dashboard to check the status of various open projects and tasks. He starts on the items flagged as high priority.

10:00 AM

Stuart has been tasked with designing a project and assembling a team to build a new fraud and waste detection application for the department. He meets with senior staff and stakeholders to understand goals and objectives for the new project.

11:00 AM

Using **comms suite**, Stuart conducts a stand-up meeting with one of his project teams. Several members join the meeting virtually. As the meeting wraps, he uses **HHS connect** to reach out to a case manager who is part of the user experience testing group to get her feedback on some open questions.

12:00 PM

Stuart receives a reminder from his **smart voice assistant**: He needs to review resumes to staff new projects today. He grabs a cup of coffee in the café and looks over the resumes from HR. He uses the **i-Match** tool to shortlist suitable data science candidates whom he would like to interview for various roles.

01:00 PM

After lunch, Stuart spends time collecting and analyzing applicable datasets for a risk assessment application they are developing for a child welfare agency. The **data management system** uses a number of tools from the **digital workforce suite** to help with various data processing tasks for the analysis.

02:00 PM

Stuart has an interview with a new data scientist he would like to staff on a project. He heads down to a conference room to meet with her and a manager from HR.

03:00 PM

Stuart gets a call from the secretary's office. The secretary has been asked to testify before the state legislature on the economic and labor market impacts of a new minimum wage law that is being debated. She asks Stuart and a team of policy analysts to build a new data model to better understand the potential impacts.

04:00 PM

Stuart's smartwatch beeps: It's time for his virtual training session. He logs into **Skills U** to participate in the training on algorithmic bias prevention techniques.

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## **Deloitte Insights contributors**

**Editorial:** Karen Edelman, Blythe Hurley, Rupesh Bhat, and Anya George Tharakan

**Creative:** Molly Woodworth

**Promotion:** Alexandra Kawecki

**Cover artwork:** Sam Chivers

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