

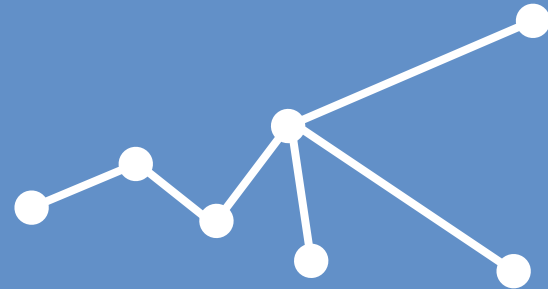
Repositioning Economics Instruction Around

Storytelling and Data

Skills

July 31, 2025

Who is Mahmoud
Harding, what does he
do, and why is he here?





Data Science 4 Everyone is a coalition
advancing data science education so that
every K-12 student is equipped with the
data skills needed to succeed in our
modern world.

Data Skills = **Data Literacy** + **Data Science**

What is the critical mission of DS4E?

Catalyze the adoption of **data literacy** and **data science** as integrated components of K-12 education by 2030.

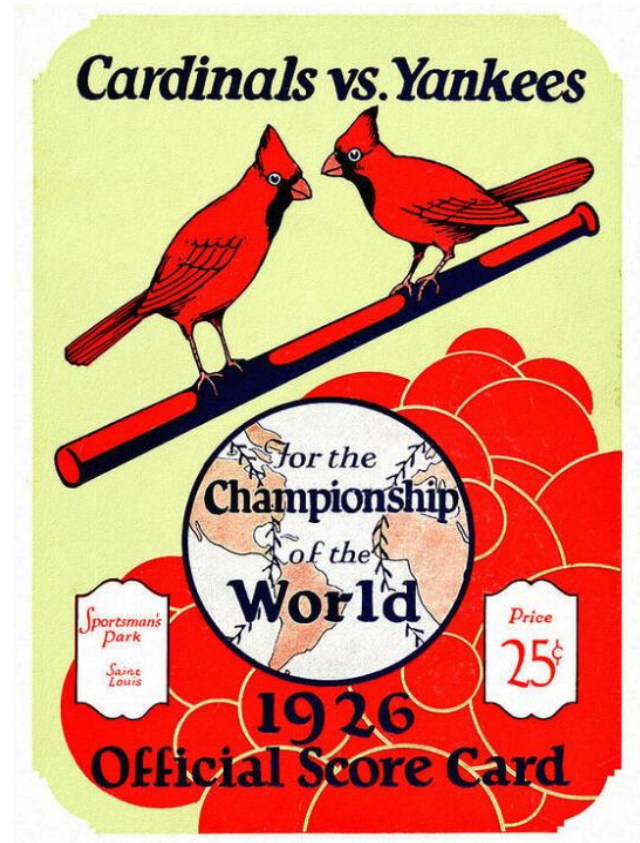
Raising awareness

Community building

Resources & support

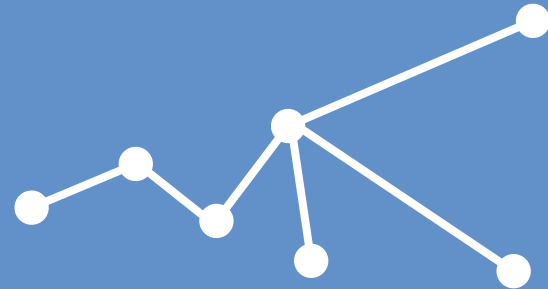
Policy advocacy

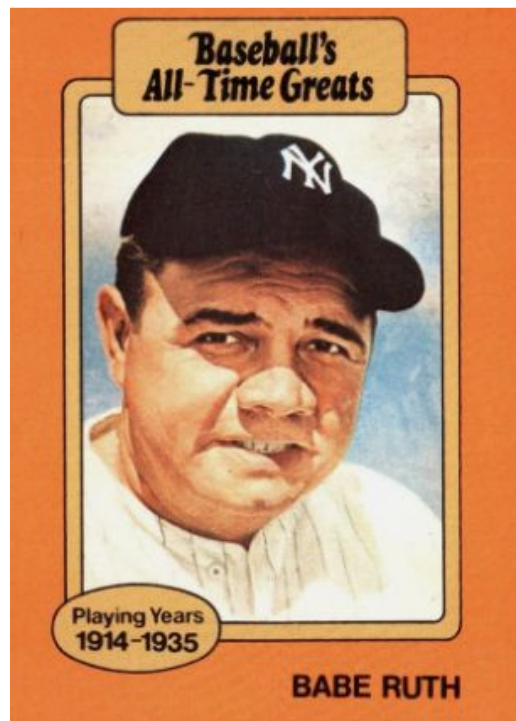
The Dorris Motor Co. 1907 - 1926



1926 World Series Scorecard

Babe Ruth and
Mahmoud Harding have
more in common than
you think

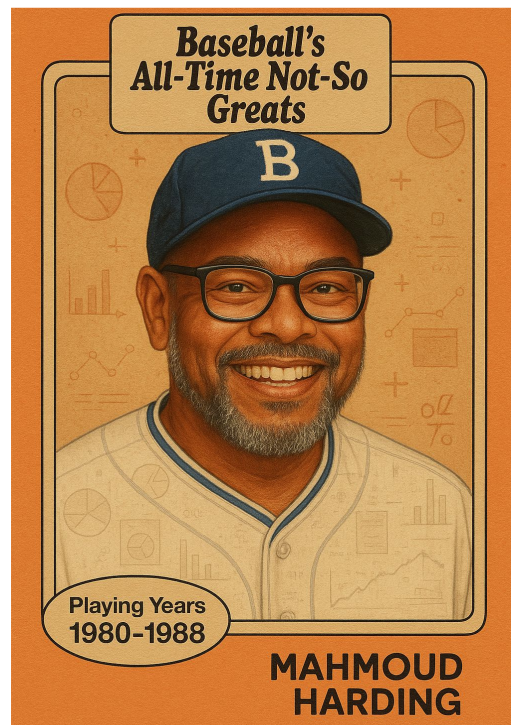




Hits: 2873

BA: .342

HR: 714



Hits: More than 0 - less than **2873**

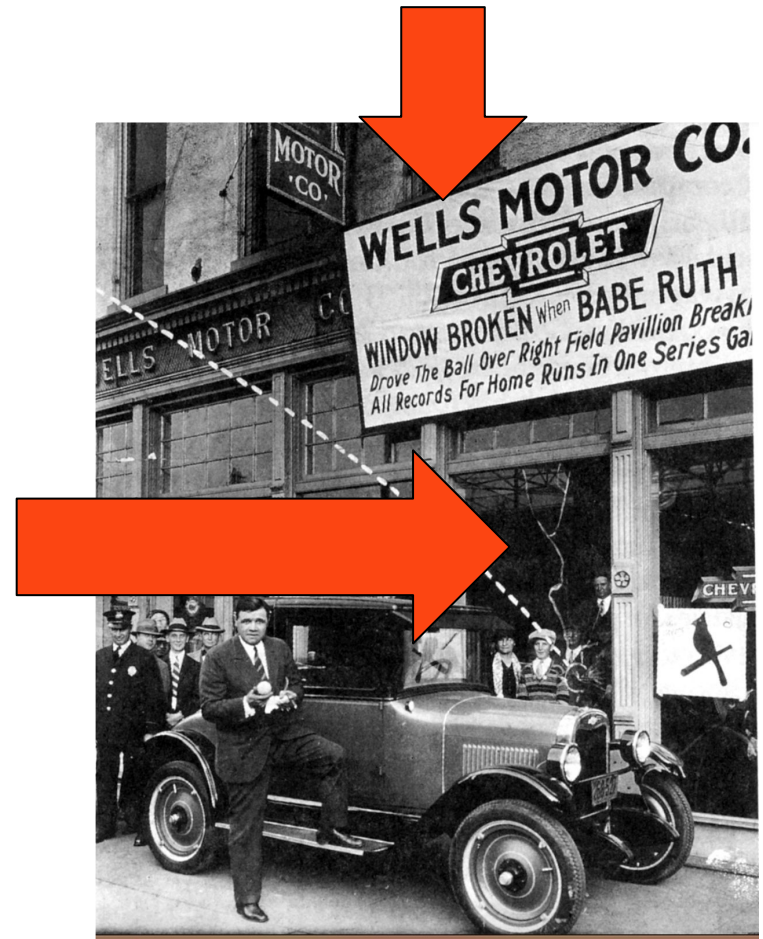
BA: More than 0 - less than **.342**

HR: 1 inside the park

In **Game 4** of the 1926 World Series Babe Ruth hit **3** home runs.

One of them *“flew over the center field fence, across the street, and through the front window of a Chevrolet showroom ...”*

Source: St. Louis Post-Dispatch, Sunday October 10, 1926, Page 63



Babe Ruth and His New Chevrolet



"but instead of landing a jail sentence he was rewarded with a brand new Chevrolet coupe."

Source: Brooklyn Eagle, Sunday, October 31, 1926
Page 69

Babe Ruth smashed a big plate glass window a couple of weeks ago, but instead of landing a jail sentence he was rewarded with a brand new Chevrolet coupe. Luckily this particular "smash" occurred when Babe clouted out three home runs in one of the recent World's Series games down in St. Louis. The longest clout flew over the center field fence, across the street and through the front window of a Chevrolet show room, and the ball dropped on a new coupe on display.

In his kid days if Babe broke any windows nearby he probably earned a sound thrashing, but all that is changed now for the Sultan of Swat. Presentation of the car was made last Wednesday at the Chevrolet show rooms, 57th st. and Broadway, Manhattan, by John H. Werring, New York retail manager for Chevrolet, and a large crowd assembled to see the Babe get his car, cheering him lustily. After a couple of barking coughs the Babe remarked to the crowd that he had a peach of a cold and that he would like to hand it to some one he didn't like.

He may have had one or two of the Cardinal pitchers in mind. Ruth was promptly surrounded by admirers but pushed his way into Mr. Werring's office, where he signed for the car. When he spied the shiny coupe he gave the crowd one of his genial grins and then posed for the photographers beside the car. Inasmuch as the Babe left almost immediately for a 15 weeks' tour in vaudeville, the Chevrolet Motor Company courteously offered him the use of a car in each of the cities where he will appear. This offer was readily accepted.

Have you ever traded in a car? What was your experience like?





Autotrader



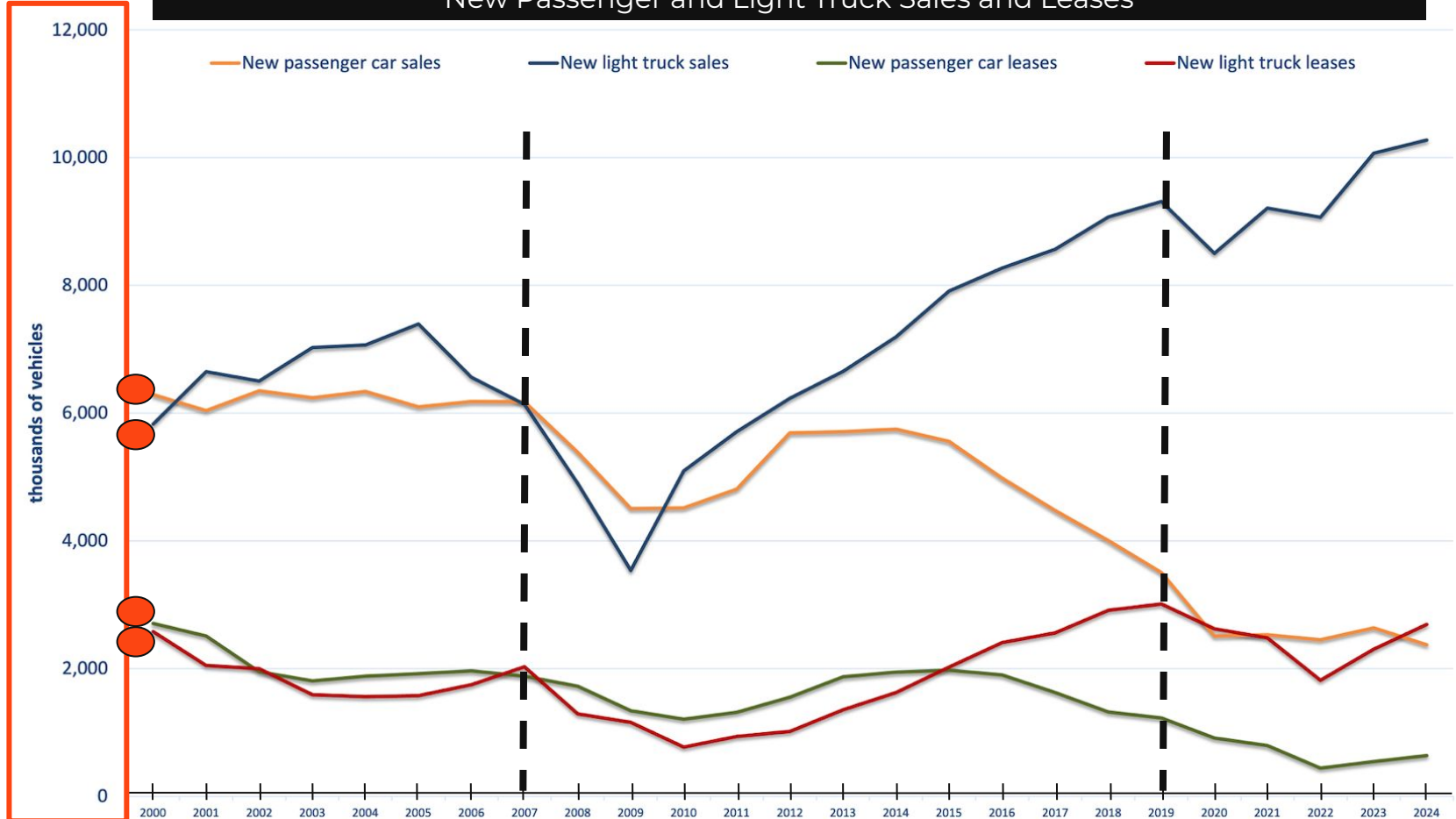
edmunds

CarGurus®





New Passenger and Light Truck Sales and Leases



Source: [Bureau of Transportation Statistics](#)

Table 1-17a: New and Used Passenger Car and Light Truck Sales

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total, vehicle sales and leases (thousands of vehicles)	51,420	49,650	49,420	51,567	55,061	56,458	55,701	56,337	56,401	57,699	59,030	59,874	59,825	60,242	59,395	61,128	59,026	57,649	49,830	46,042	48,500	49,699	52,077	51,368
New vehicle sales and leases^a	13,890	12,360	12,470	13,510	14,920	14,700	14,900	15,100	15,560	16,960	17,410	17,250	16,800	16,670	16,850	16,990	16,460	16,230	13,300	10,550	11,589	12,778	14,494	15,592
Passenger cars	9,300	8,200	8,200	8,500	9,000	8,500	8,200	8,200	8,200	8,750	9,000	8,550	8,300	8,050	8,220	8,020	8,150	8,060	7,110	5,850	5,724	6,128	7,245	7,583
Light trucks	4,590	4,160	4,270	5,010	5,920	6,200	6,700	6,900	7,360	8,210	8,410	8,700	8,500	8,620	8,630	8,970	8,310	8,170	6,190	4,700	5,865	6,650	7,249	8,010
New vehicle sales	12,826	11,106	10,748	11,028	11,696	11,320	11,120	11,260	11,050	11,500	12,120	12,690	12,852	13,268	13,406	13,492	12,742	12,317	10,285	8,047	9,610	10,521	11,923	12,364
Passenger cars	8,320	7,080	6,870	6,780	6,770	6,270	5,850	5,890	5,410	6,090	6,290	6,040	6,350	6,240	6,340	6,098	6,182	6,177	5,387	4,507	4,515	4,812	5,692	5,712
Light trucks	4,506	4,026	3,878	4,248	4,926	5,050	5,270	5,370	5,640	5,410	5,830	6,650	6,502	7,028	7,066	7,394	6,560	6,140	4,898	3,540	5,095	5,709	6,231	6,653
New vehicle leases	1,064	1,254	1,722	2,482	3,224	3,380	3,780	3,840	4,510	5,460	5,290	4,560	3,948	3,402	3,444	3,498	3,718	3,913	3,015	2,503	1,979	2,256	2,571	3,228
Passenger cars	980	1,120	1,330	1,720	2,230	2,230	2,350	2,310	2,790	2,660	2,710	2,510	1,950	1,810	1,880	1,922	1,968	1,883	1,723	1,343	1,209	1,316	1,553	1,871
Light trucks	84	134	392	762	994	1,150	1,430	1,530	1,720	2,800	2,580	2,050	1,998	1,592	1,564	1,576	1,750	2,030	1,292	1,160	770	941	1,018	1,357
Used vehicle sales^b	37,530	37,290	36,950	38,057	40,141	41,758	40,801	41,237	40,841	40,739	41,620	42,624	43,025	43,572	42,545	44,138	42,566	41,419	36,530	35,492	36,911	36,921	37,583	35,776
Value (billions of dollars)^c																								
Total, new and used vehicle sales	447	437	486	524	582	611	627	642	651	698	736	737	721	738	765	776	786	774	643	575	945	1,008	1,074	1,103
New vehicle sales	227	208	240	267	291	292	298	306	316	348	380	369	371	382	407	421	445	435	351	274	347	391	446	495
Used vehicle sales	220	229	246	257	291	319	329	336	335	350	356	367	350	356	358	355	341	339	292	301	598	617	628	608
Average price (current dollars)^b																								
New and used vehicle sales	8,691	8,813	9,759	10,078	10,543	10,818	11,221	11,385	11,545	12,098	12,469	12,321	12,034	12,253	12,868	12,695	13,287	13,451	12,909	12,518	25,809	(R) 26,168	25,770	26,184
New vehicle sales	16,350	16,880	18,655	19,200	19,335	19,819	19,727	20,214	20,276	20,534	21,850	21,507	22,005	22,894	24,082	24,796	26,854	26,950	26,477	26,245	35,417	35,635	34,839	35,368
Used vehicle sales	5,857	6,143	6,656	6,742	7,245	7,644	8,073	8,139	8,211	8,587	8,547	8,619	8,130	8,180	8,410	8,036	8,009	8,186	7,986	8,483	16,200	16,700	16,700	17,000

KEY: R = revised; U = data are not available.

^a New vehicle leases are sold by the dealer to a finance company that manages the lease, causing them to be included by default in most car sales figures.

^b Used vehicle sales include sales from franchised dealers, independent dealers, and casual sales.

^c Includes leased vehicles.

NOTES

Prior to 2010, Average price cannot be reliably calculated from the data presented in this table because the vehicle sales and value of sales are from different sources.

Components may not add to totals due to rounding.

Years 2010 and later may be comparable to previous years, due to different sources.

Light truck or light-duty truck is a US classification for trucks or truck-based vehicles with a gross vehicle weight rate (GVWR) up to 8,500 lbs and a payload capacity up to 4,000 lbs. This includes vans, minivans, sport utility vehicles(SUVs), and pickup trucks.

Leases include private and retail figures, corporate or government fleet leases are not included.

Sources include vehicles up to class 5 with GVWR 19,500 lbs.

New vehicle sales and and leases:

1990-2009: CNW Research, personal communication, Mar. 22, 2011.

2010-24 Edmunds, personal communication, May 13, 2020, May 24, 2021, Apr. 14, 2022, Apr. 28, 2023 and Jun. 6, 2025.

Used vehicle sales and average price:

1990-2009: Manheim Consulting, personal communication, Mar. 15, 2011

2010-19 Edmunds, *Used Vehicle Report*, available at <https://www.edmunds.com/industry/insights/> as of Apr. 10, 2020.

Source: [Bureau of Transportation Statistics](#)

National View or State Filter

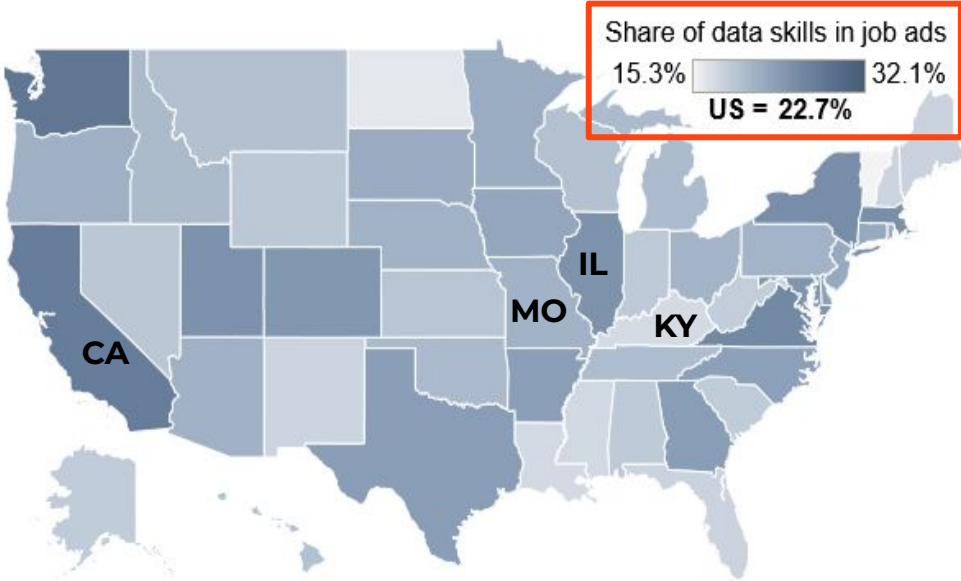
(Or select one state on the map)

United States ▼

Data Science Skills Category Filter

Getting, Exploring, and Analyzing Data (Macrocategory) ▼

**SHARE OF STATE JOB POSTINGS
SEEKING DATA SCIENCE SKILLS** ?



“Data Science is for Everyone”

22.7 percent of job postings in **the United States** are asking for at least one skill from the category **Getting, Exploring, and Analyzing Data**

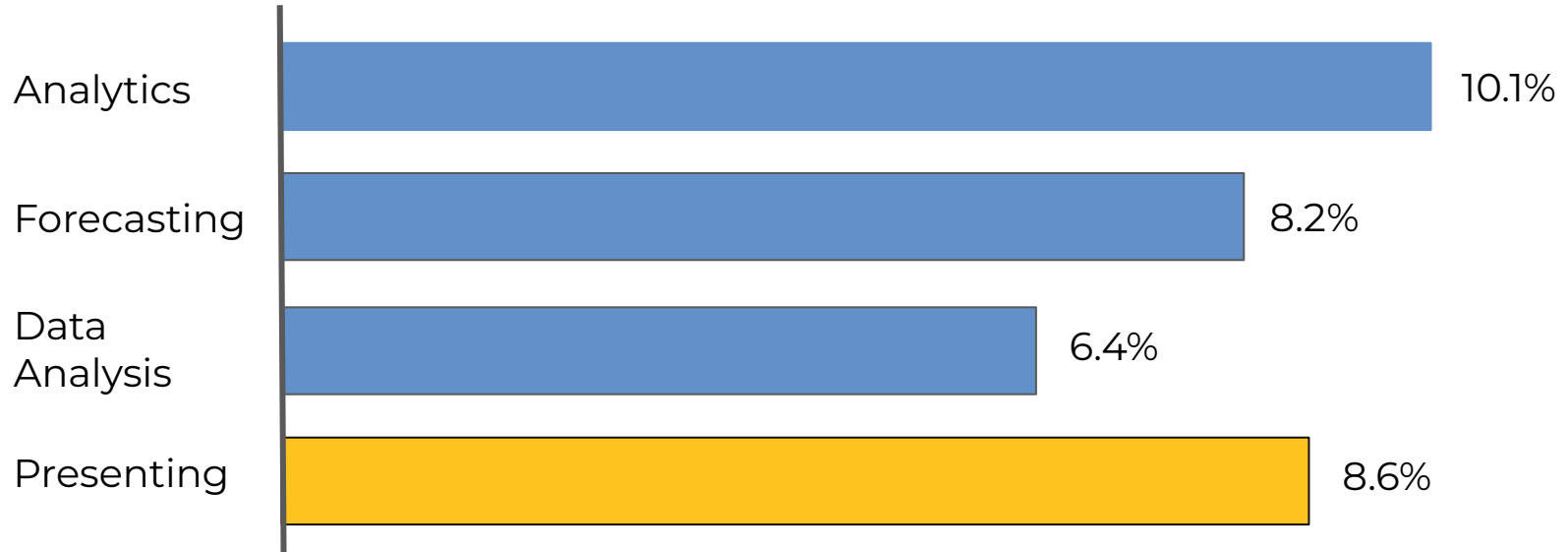
Source: [Burning Glass Institute analysis of Lightcast posting data](#)

Wage premium estimates for “*specialized*” data science skills



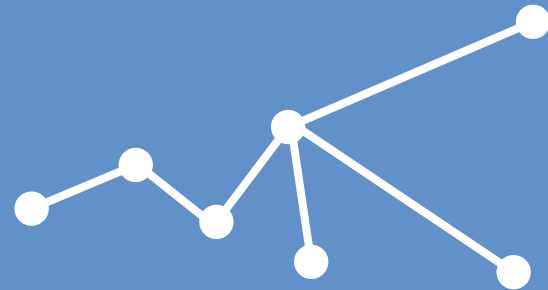
Source: [Burning Glass Institute analysis of Lightcast posting data](#)

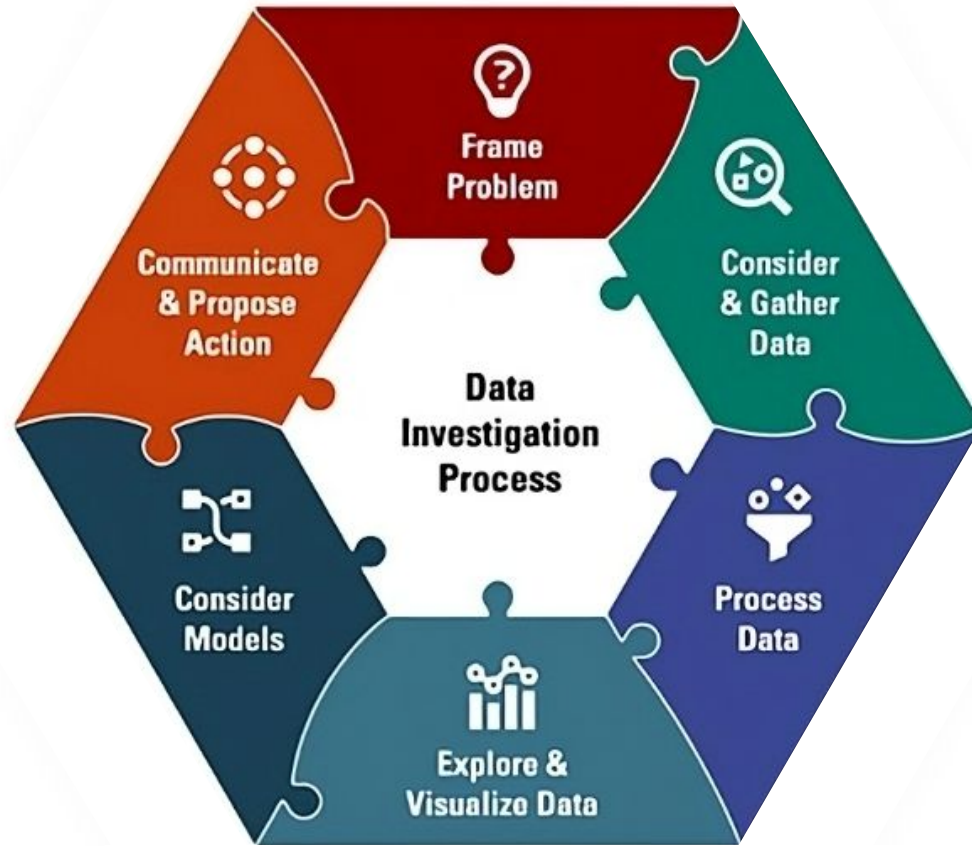
Wage premium estimates for **“common”** data science skills & **“communicating the results”**



Source: [Burning Glass Institute analysis of Lightcast posting data](#)

How do we incorporate
data skills into our
instructional practices?





Lee, H., Mojica, G., Thrasher, E., & Baumgartner, P. (2022). Investigating data like a data scientist: Key practices and processes. *Statistics Education Research Journal*, 21(2), Article 3. <https://doi.org/10.52041/serj.v21i2.41>

Data Moves are an “**academic data science approach**” to analysis

“We define a **data move** as an action that alters a dataset’s contents, structure, or values.”

Erickson, T., Wilkerson, M., Finzer, W., & Reichsman, F. (2019). Data Moves. *Technology Innovations in Statistics Education*, 12(1). <http://dx.doi.org/10.5070/T5121038001>



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The **6** core data moves

- ✓ Filtering
- ✓ Grouping
- ✓ Summarizing
- ✓ Calculating
- ✓ Merging | Joining
- ✓ Making Hierarchy

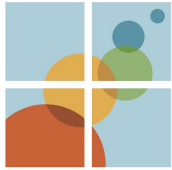


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Erickson, T., Wilkerson, M., Finzer, W., & Reichsman, F. (2019). Data Moves. *Technology Innovations in Statistics Education*, 12(1). <http://dx.doi.org/10.5070/T5121038001>

Data Moves are a ***“tool agnostic approach”*** to analysis

No | Low-Code



CODAP

Common Online Data Analysis Platform



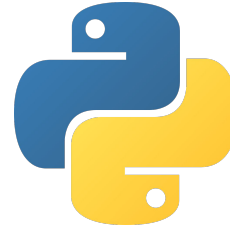
+ a b l e a u[®]



Open for Innovation

KNIME

High-Code



Generative AI Coding Tools



ChatGPT

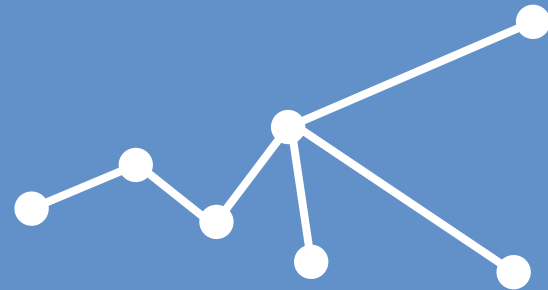


GitHub
Copilot



Claude

*Both Babe Ruth and
Mahmoud Harding had
unique experiences with
car dealerships*





Johnson Subaru of Cary

Sales 984-276-1623

NEW INVENTORY

USED INVENTORY

SHOP FROM HOME

SPECIALS

FINANCE & RESEARCH

SERVICE & PARTS

ABOUT US



Search by make, model, etc.



ANY TYPE



ANY YEAR



ANY MAKE



ANY MODEL



ANY BODY STYLE



ALL FILTERS



SHOW 462 MATCHES



SUBARU

JOHNSON

Value Your Trade



Shop New and Pre-Owned



Schedule Service



See Current Specials



Value Your Trade

Enter Year Make Model Trim

POWERED BY
TRADEPEND

2016 Toyota Camry SE Sedan | FWD | I4 2.5L Gas

How is this calculated?

TradePending, an independent data provider, estimated the value of your car to dealers based on listed vehicle prices.
[below](#)

[See calculations](#)

Supply

Like Vehicles in Market



-53%

*Local supply is down
compared to 90 days ago*

Trade Value

Value to a Dealer

\$12,611 to \$14,618

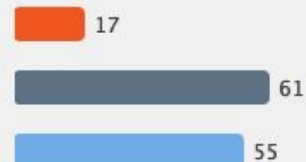
Vehicle Mileage

57000

Update

Demand

Days to Sell in Market



- Your Vehicle
- Average 2016
- Average Sedan



TRADEPENDING



Your Vehicle's Estimated Value

Numbers based on market and dealership estimates

Line item deductions are based on market standards and dealer's estimates.

List Price Range:

**\$15,929 -
\$17,998**

Estimated Discount From List (3%)	\$531
Dealer Re-conditioning	\$1,029
Depreciation	\$170
Dealer Advertising Cost ¹	\$322
Average Dealer Overhead ²	\$1,030
Dealer Net Profit ³	\$289

Estimated Dealer Value: \$12,611 - \$14,618

¹ NADA Data 2022 cite total Advertising of \$8.57B divided by 26.6m total units = \$322

² Overhead takes historical average gross profit and reduces that by Net Profit, Advertising, and Re-conditioning costs

³ Historical study of NADA Data reports, industry research, and internal data

Close



This is not an offer to purchase your vehicle. All values are derived from real market data and adjusted daily. Final inspection of your vehicle is required.

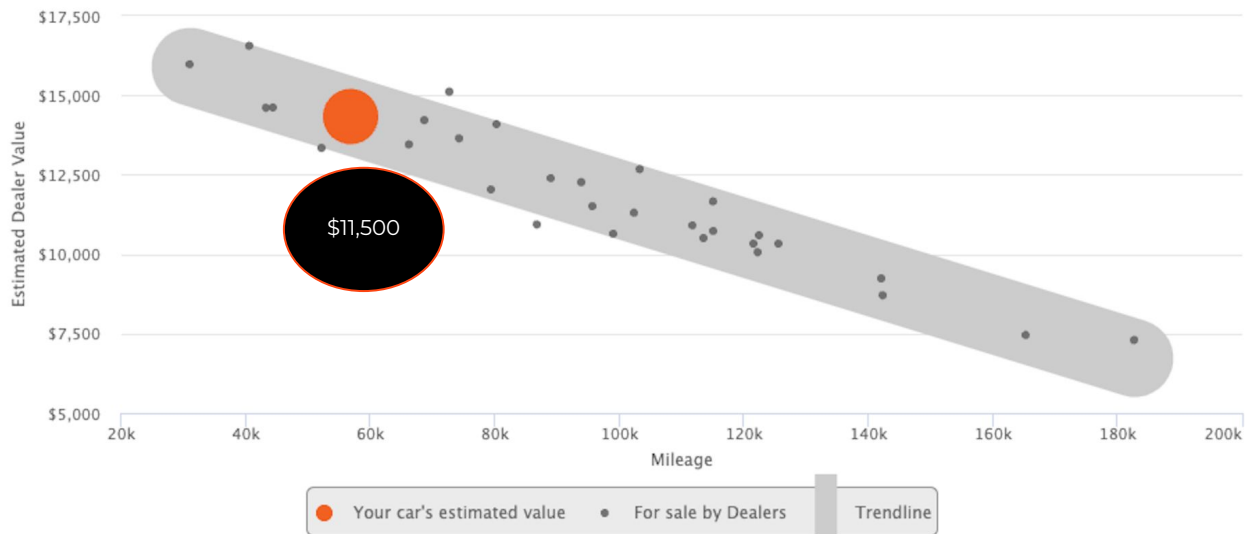


Comparable Vehicles

31 Like Vehicles for Sale or Recently Sold within 150 Miles of 27511

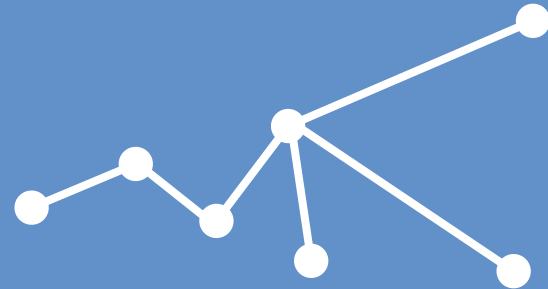
Like Vehicles for Sale

The orange dot is your vehicle. Hover over all dots to see estimated value.

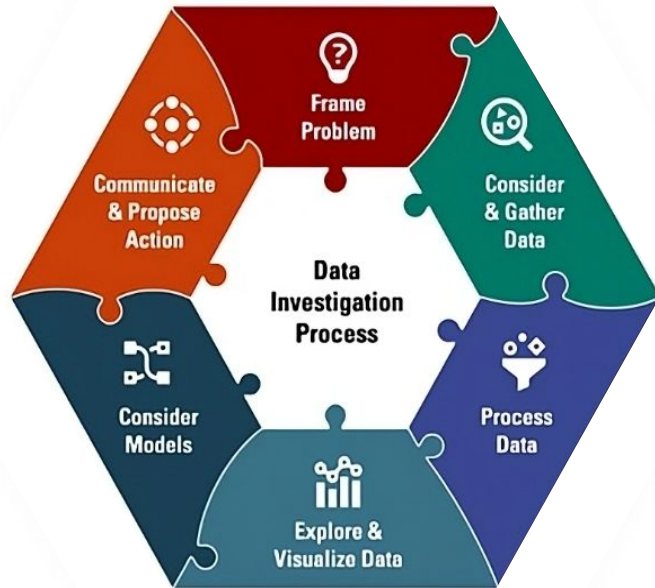


Close

A call to action



Data Investigation Process + Data Moves



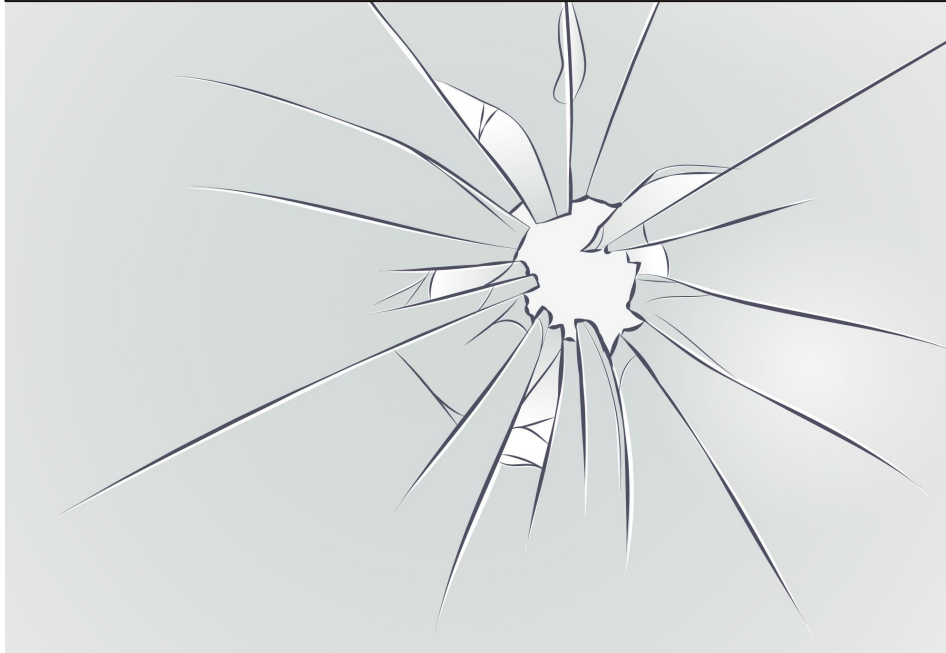
Lee, H., Mojica, G., Thrasher, E., & Baumgartner, P. (2022). Investigating data like a data scientist: Key practices and processes. *Statistics Education Research Journal*, 21(2), Article 3. <https://doi.org/10.52041/serj.v21i2.41>



Erickson, T., Wilkerson, M., Finzer, W., & Reichsman, F. (2019). Data Moves. *Technology Innovations in Statistics Education*, 12(1). <http://dx.doi.org/10.5070/T5121038001>

The Window of Traditional
Economics Instruction
Broken by
Incorporating Storytelling & Data Skills

The **now & future** of economics teaching.

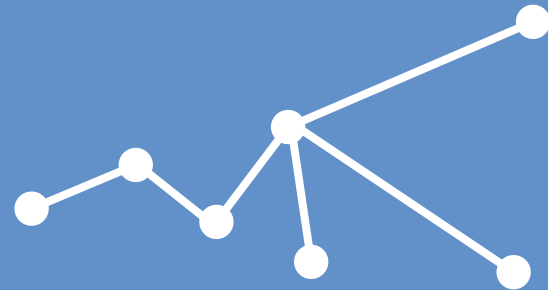


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Additional resources for
incorporating storytelling
& data skills into your
economics instruction





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of ST. LOUIS**

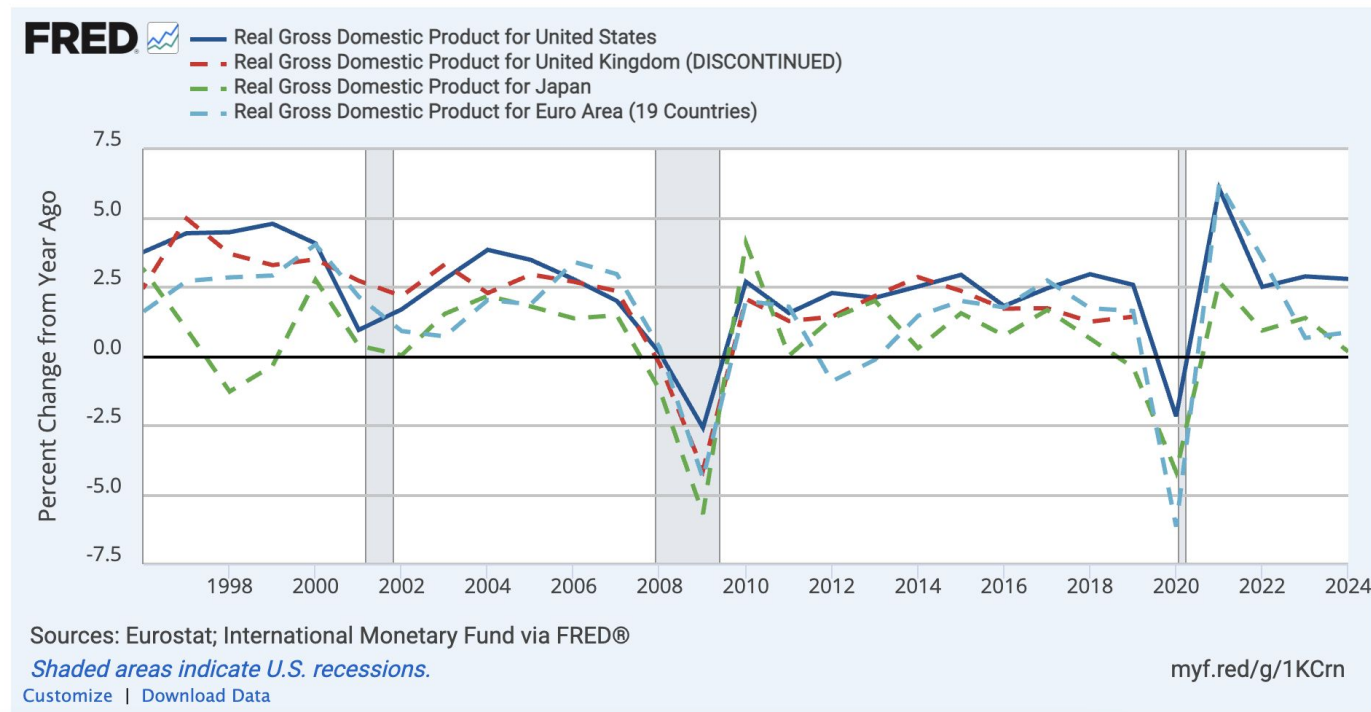
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Economics for Everyone (E4E) is a multimedia initiative from the University of Chicago that brings the power of economic thinking to everyone, everywhere. Our first digital offering is **a free, flexible microeconomics curriculum** that sets aside complex math to help students think like economists, sharpen their critical thinking, and become better decision-makers.

Key Resources

- **30+ Core Videos (5-12 min):** Taught by UChicago faculty, covering essential economic concepts.
- **25+ Explainer Videos (2-5 min):** Break down the math and mechanics behind the ideas.
- **29 Lesson Plans:** Co-created with high school teachers, E4E videos paired with classroom activities that encourage economic reasoning.

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Tidy Data, Tame Data, and Storytelling

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Thank You

Mahmoud Harding

mharding@uchicago.edu