Jose Iglesias

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#1 SS | Bats: R, Throws: R | Detroit Tigers

Birth Date	January 5, 1990 (Age: 24)
Birthplace	Havana, Cuba
Experience	3 years
College	None
Ht/Wt	5-11, 185 lbs.

DATE	OPP	RESULT	AB	R	H	2B	3B	HR	RBI	BB	SO	SB	CS	OBP	SLG	OPS	AVG
Apr 1	@ NYY	W 8-2	5	1	3	0	0	0	1	0	1	0	0	.600	.600	1.200	.600
Apr 3	@ NYY	W 7-4	4	1	2	1	0	0	0	0	1	0	0	.556	.667	1.223	.556
Apr 4	@ NYY	L 4-2	3	0	2	0	0	0	0	0	0	0	0	.583	.667	1.250	.583
Apr 5	@ TOR	W 6-4	0	0	0	0	0	0	0	0	0	0	0	.615	.667	1.282	.583
Apr 6	@ TOR	L 5-0	Did not play														
Apr 7	@ TOR	W 13-0	5	1	2	1	0	0	0	0	1	0	0	.556	.647	1.203	.529
Apr 8	vs BAL	W 3-1	3	0	0	0	0	0	0	0	0	0	0	.476	.550	1.026	.450
Monthly Totals			**20**	**3**	**9**	**2**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**.476**	**.550**	**1.026**	**.450**

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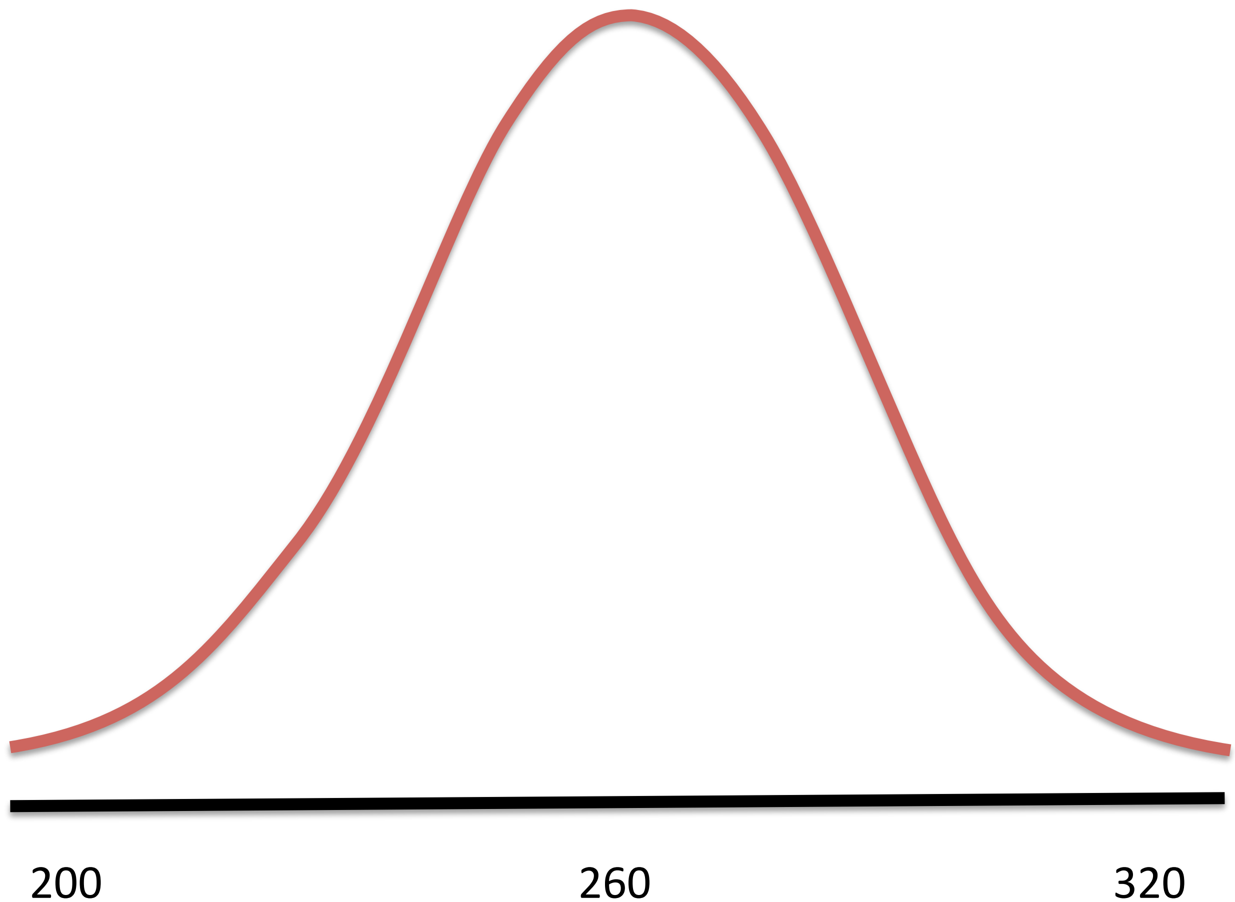

A (rough) sketch of the MLB batting average distribution.

[RI]

A hierarchical model

$$\theta \sim N(\mu, \tau^2)$$

$$Y|\theta \sim N(\theta, \sigma^2)$$

Here, θ denotes *any* batting average among the MLB players, and *Y* denotes the player's batting average. The parameter τ quantifies the prior standard deviation, and σ describes the sampling standard deviation. Specifically:

$$\theta \sim N(260, 34^2)$$

$$Y|\theta \sim N(\theta, 110^2)$$

A hierarchical model

Best guess for the players batting average, given the observed data:

$$
\begin{aligned}
E(\theta|Y) &= B\mu + (1-B)Y \\
&= \mu + (1-B)(Y-\mu)
\end{aligned}
$$

$$B = \frac{\sigma^2}{\sigma^2 + \tau^2}$$

Specifically:

$$
\begin{aligned}
E(\theta|Y=450) &= B \times 260 + (1-B) \times 450 \\
&= 260 + (1-B)(450-260)
\end{aligned}
$$

$$B = \frac{110^2}{110^2 + 34^2}$$

$$E(\theta|Y=450) \approx 270$$