

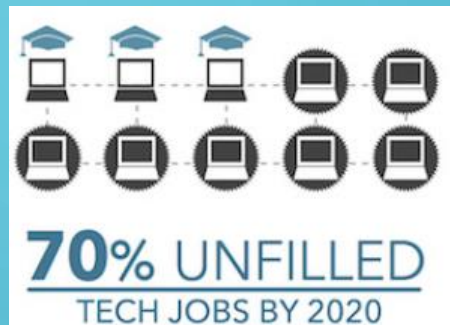
Como insertar las mujeres en el coding y las estadísticas

De Lo Invisible
a Lo Visible



Patricia Ordóñez, PhD,
Universidad de Puerto Rico Río Piedras

2020



Aproximadamente
1 million
Puestos sin llenar

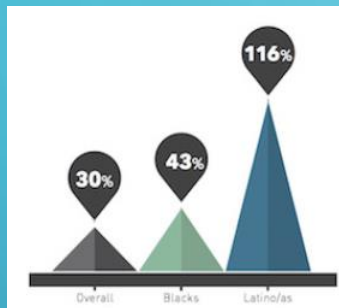
2016 -> <http://code2040.org/announcements/infographic-techs-big-opportunity-gap/>

2024

- 1.1 million de puestos disponibles
- 65% puestos sin llenar
- 605,000 puestos sin llenar

2018 -> <https://www.ncwit.org/>

2040



Todos AAs Latinos

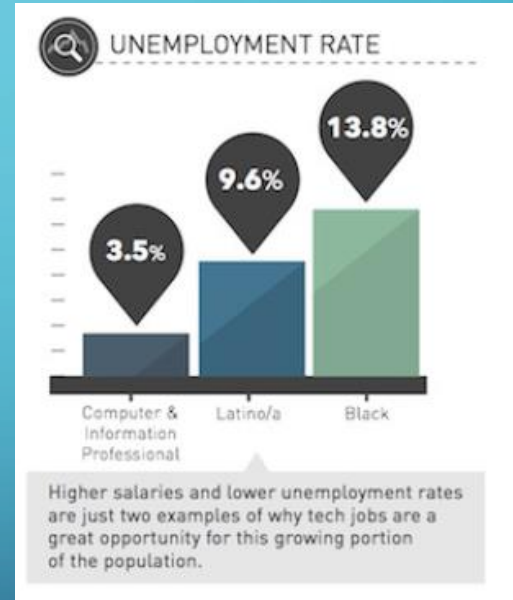
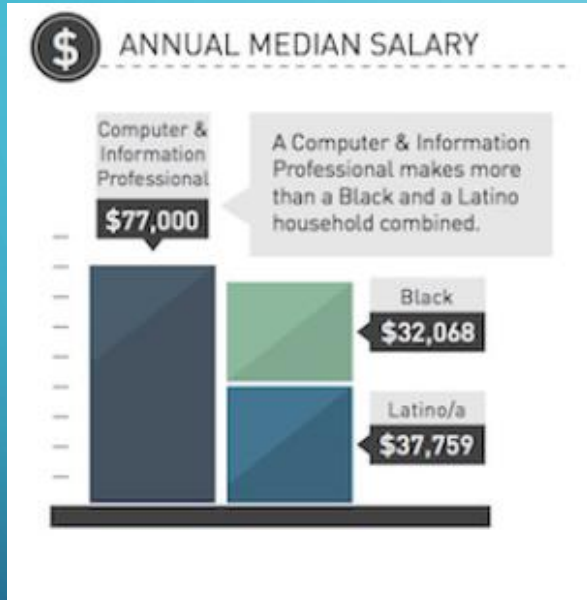
Los Latinos y los
AfroAmericanos
compondrán el

42%

de la población

Hoy día los Latinos son la minoría más grande
en los Estados Unidos

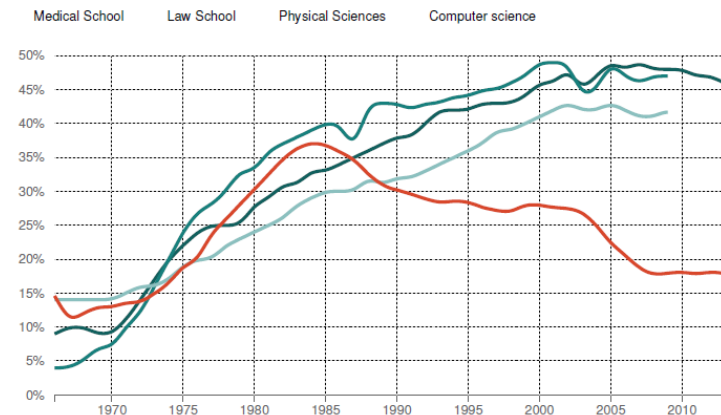
2016 en USA



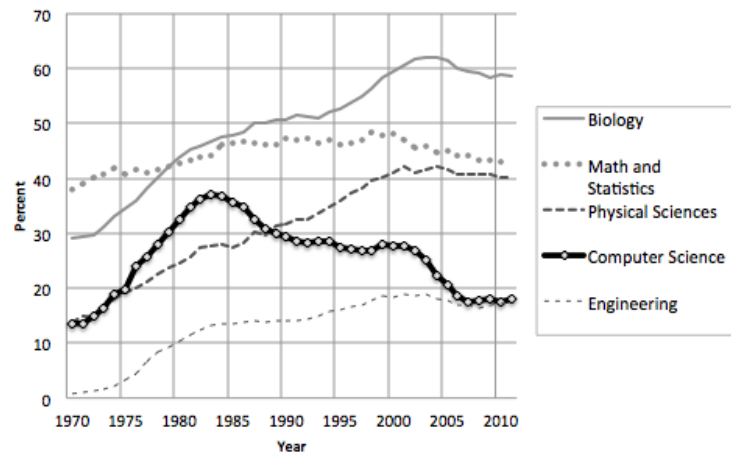
Women in fields traditionally held by men

What Happened To Women In Computer Science?

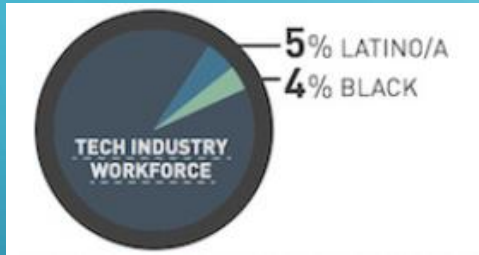
% Of Women Majors, By Field



Source: National Science Foundation, American Bar Association, American Association of Medical Colleges
Credit: Quoc Trung Bui/NPR



Underrepresented in the Tech Industry



US Computing Labor Force

<https://www.ncwit.org/>

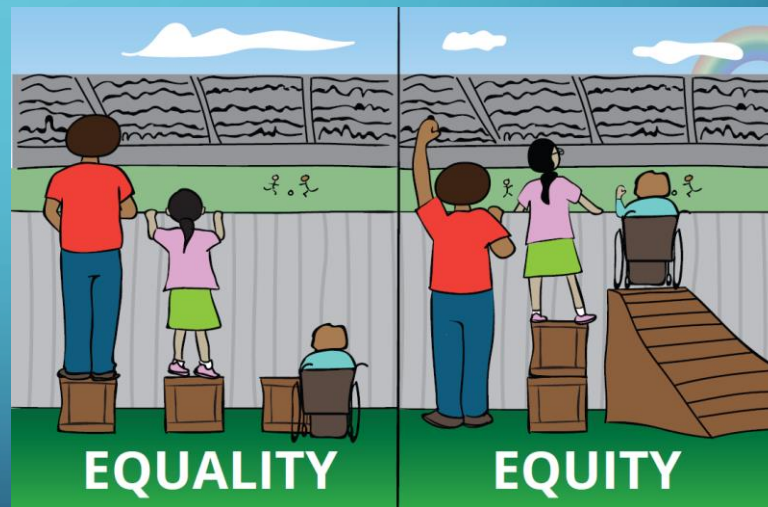
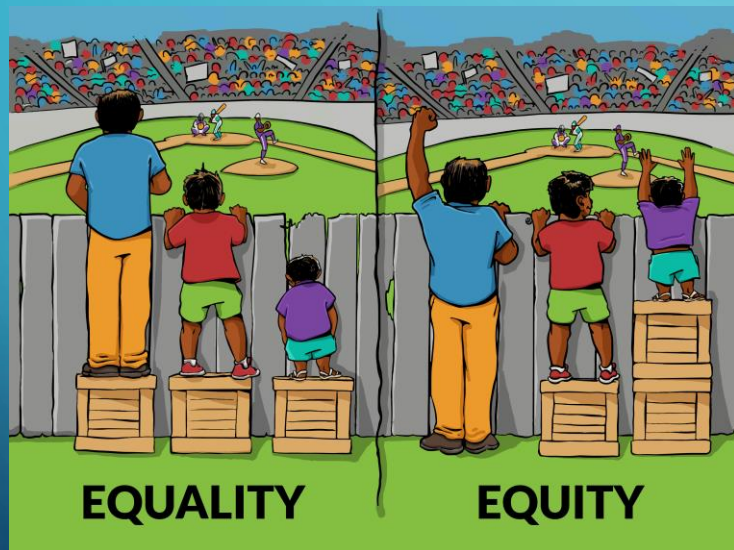
26% women in 2016

- 5% Asian Women
- 3% African-American Women
- 2% *Latinas*

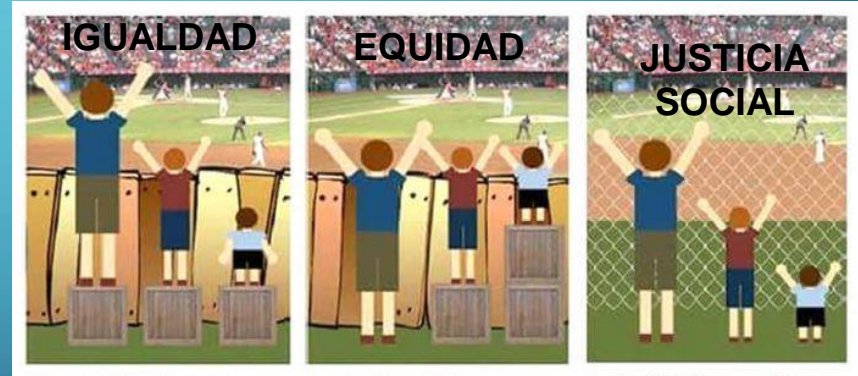
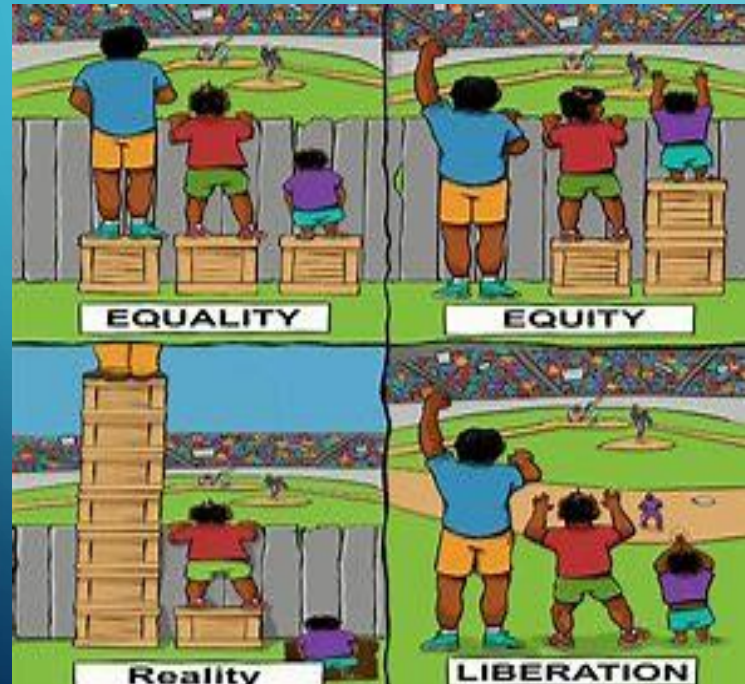
PR Computing Labor Force

38% women in 2014

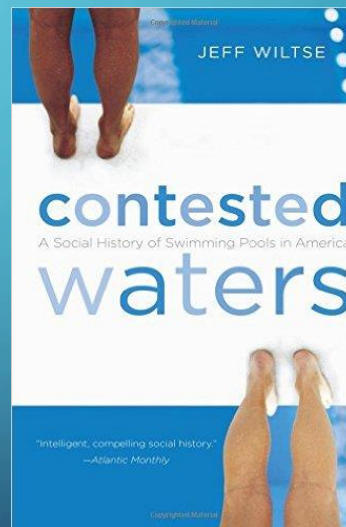
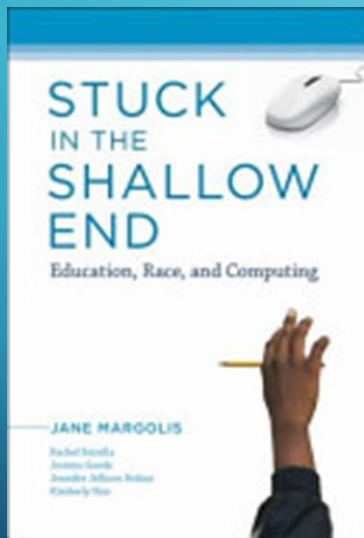
¿Qué es la Equidad?



¿Qué es la Equidad?



Equity and Computer Science Education



Black people can't swim!

Digital Ghettos

- Shallow vs Deep Knowledge



Bridging the Digital and Data Divide

Resaltar los invisibles en historia

Romper estereotipos

Valorar la perspectiva femenina

Crear programas interdisciplinarios

Crear sistemas de apoyo para mujeres

Exponer a todos al pensamiento computacional y programación en K-12



MODERN DATA SCIENTIST

Data Scientist, the sexiest job of the 21st century, requires a mixture of multidisciplinary skills ranging from an intersection of mathematics, statistics, computer science, communication and business. Finding a data scientist is hard. Finding people who understand who a data scientist is, is equally hard. So here is a little cheat sheet on who the modern data scientist really is.

MATH & STATISTICS

- ☆ Machine learning
- ☆ Statistical modeling
- ☆ Experiment design
- ☆ Bayesian inference
- ☆ Supervised learning: decision trees, random forests, logistic regression
- ☆ Unsupervised learning: clustering, dimensionality reduction
- ☆ Optimization: gradient descent and variants

DOMAIN KNOWLEDGE & SOFT SKILLS

- ☆ Passionate about the business
- ☆ Curious about data
- ☆ Influence without authority
- ☆ Hacker mindset
- ☆ Problem solver
- ☆ Strategic, proactive, creative, innovative and collaborative



PROGRAMMING & DATABASE

- ☆ Computer science fundamentals
- ☆ Scripting language e.g. Python
- ☆ Statistical computing packages, e.g., R
- ☆ Databases: SQL and NoSQL
- ☆ Relational algebra
- ☆ Parallel databases and parallel query processing
- ☆ MapReduce concepts
- ☆ Hadoop and Hive/Pig
- ☆ Custom reducers
- ☆ Experience with xaaS like AWS

COMMUNICATION & VISUALIZATION

- ☆ Able to engage with senior management
- ☆ Story telling skills
- ☆ Translate data-driven insights into decisions and actions
- ☆ Visual art design
- ☆ R packages like ggplot or lattice
- ☆ Knowledge of any of visualization tools e.g. Flare, D3.js, Tableau

Bridging the Digital and Data Divide

¿Quienes son los invisibles en CS y DS en Puerto Rico?

<http://magazine.amstat.org/statisticians-in-history/wis/>

<https://www.hillelwayne.com/post/important-women-in-cs/>

Patricia Ordóñez

patricia.ordonez@upr.edu