HIDK 4()5():

http://bit.ly/HUDK405019-TEST

In the news



Solving these 5 issues will make education AR/VR go mainstream

Dropout rates soar in Brazil's tech higher education





Under AI's Watchful Eye, China Wants to Raise Smarter Students

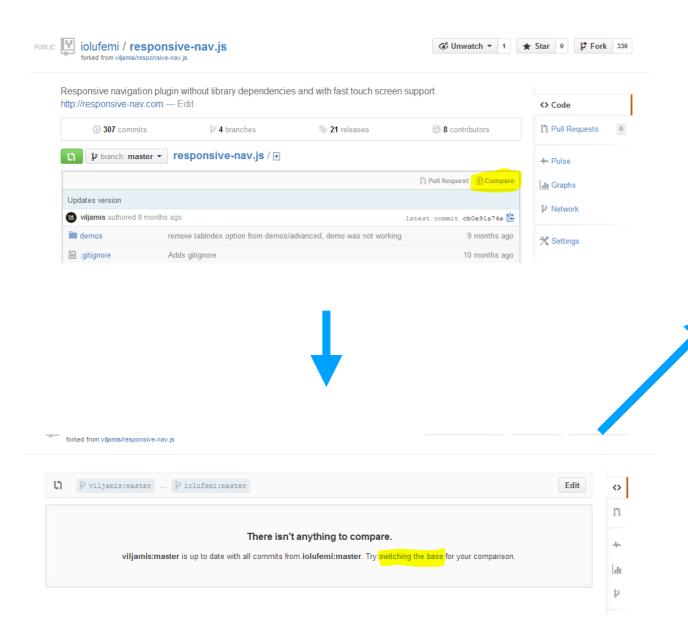
How AI is transforming education and skills development

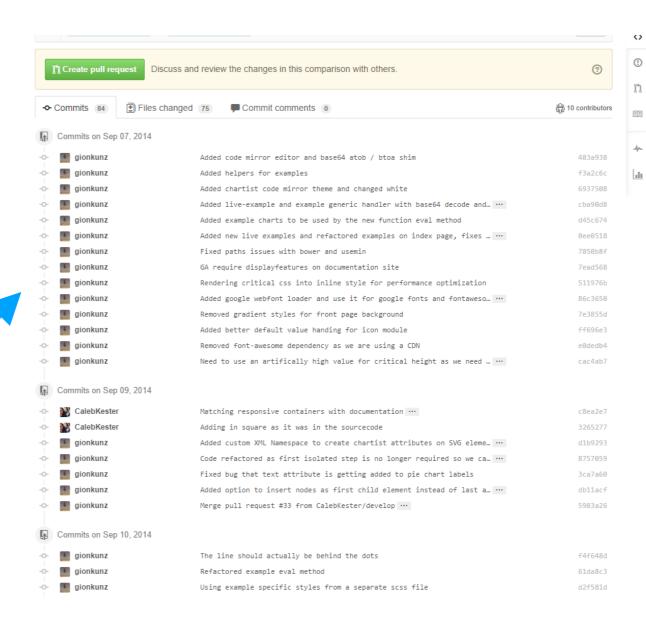
Microsoft

Events

Title	Date - Time	Location
Machine Learning for Scientific Inference	10/9 - 5:00pm	Davis Auditorium
Cornell Tech: Day of Data	10/15	Cornell Tech
Chip Paucek, Co-Founder of 2U	10/17 - 5:00pm	Low Library 207
Data Science Institute Fall Scholars Programs	Deadline: 10/21	
Where on Earth is Al Headed?	10/25 - 2:00pm	Davis Auditorium
Robotics to Retrain & Restore Human Movements	11/1 - 12:00pm	NWB Rm 1406

Update a Github Fork





iGraph

iGraph

Generate a random graph:

```
g <- sample_gnp(10, 0.5, directed = FALSE, loops =
FALSE)</pre>
```

Print the details of the graph:

g

Undirected/Directed, N = named vertices, W = weighted edges, B = bipartite graph number of vertices, number of edges

```
IGRAPH e5bd4b9 U--- 10 92 -- Erdos renyi (gnp) graph + attr: name (g/c), type (g/c), loops (g/l), p (g/n) + edges from e5bd4b9:
[1] 1-- 3 2-- 3 2-- 4 3-- 6 4-- 6 4-- 7
```

iGraph

Data Structures

Adjacency Matrix

	Α	В	С
Α		1	0
В	1		0
С	0	1	

To-From + Vertex Attributes

From	То
Α	В
В	С
С	Α

ID	Age
Α	10
В	11
С	10

Plotting

- plot
- tkcl
- rggl

Adjacency & Vertex/Edge List

```
V(g) $label.cex <- 2.2 * V(g)$degree / max(V(g)$degree) + .2
```

Vertex/Edge List Only

```
plot(g, layout=layout,
    vertex.color= D8$cols,
    vertex.label = NA,
    vertex.size = 3,
    edge.width=0.02,
    vertex.frame.color=NA)
```

Matrix Multiplication

	C1	C2	C3
Α	0	1	0
В	1	1	1
С	0	0	1

%*%

	Α	В	С
C1	0	1	0
C2	1	1	0
C3	0	1	1

 $0 \times 0 + 1 \times 1 + 0 \times 0$

	Α	В	С
Α	1	1	0
В	1	3	1
С	0	1	1