

 Search Mail Search the Web [Show search options](#)
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Mail
Contacts
Tasks

Compose mail

Priority Inbox (3)

Buzz (4)

Starred ☆
Sent Mail
Drafts (1)
All Mail

Personal
Travel
7 more ▼

Chat

Search, add, or invite

Douglas Aberdeen
Set status here ▼

☑ Archive Report spam Delete + - Move to ▾ Labels ▾ More actions ▾ Refresh

[-] Important and unread ▾

☑ ☆ NIPS Information » NIPS 2010 Lift Ticket Discounts - Dear NIPS Workshops Attendee, The b

☐ ☆ Hyatt Regency Vancouver » Hyatt Web Checkout invitation - If you are having trouble viewing this me

☐ ☆ Facebook » Welcome back to Facebook - facebook Hi Douglas, Welcome back to Fa

[-] Starred ▾ Important mainly because of the words in the message.

☐ ☆ NIPS Information » NIPS 2010 Workshops Information - Greetings NIPS Workshop Attendees,

[-] Everything else ▾

☐ ☆ IEEE Spectrum Tech Alert » Squishy electronics, glasses-free 3-D displays, and the Internet hijack

☐ ☆ IEEE Spectrum Digital Di. » Don't Forget, Your Dec IEEE Spectrum is Waiting - Now available on th

☐ ☆ PayPal » Douglas Aberdeen, make the most of your PayPal account + gifts to B

☐ ☆ LinkedIn Updates » LinkedIn Network Updates, 12/08/2010 - LinkedIn Network Updates, Dec

☐ ☆ Freq Flyer News » The Secret Cure to Jetlag - Read the Gazette online HERE To ensure Del

☐ ☆ eBay » Shop the Sale & get up to \$100 cashback* from PayPal - Can't see the p

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Try it out from the Priority Inbox settings tab.

Doug Aberdeen, Ondřej Pacovský, Andrew Slater

PASSIVE-AGGRESSIVE LOGISTIC REGRESSION

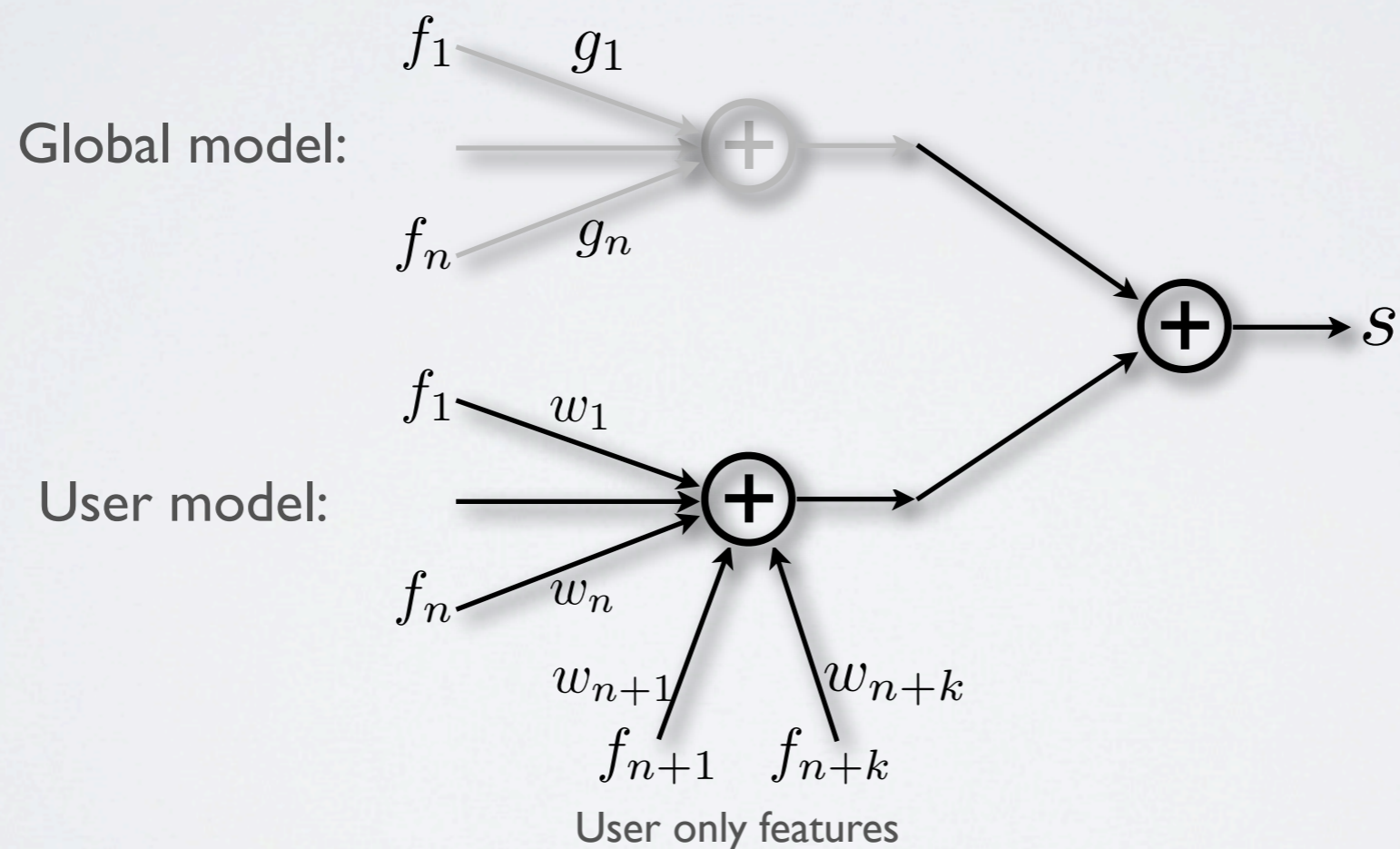
- Crammer, Dekel, Keshet, Shalev-Shwartz, Singer: “*Online Passive-Aggressive Algorithms*”, 2006

$$e = \begin{cases} 1 - p & \text{if important;} \\ -p & \text{otherwise.} \end{cases} \quad w_i \leftarrow w_i + f_i \frac{\max(e - \epsilon, 0)}{\|\mathbf{f}\|^2 + \frac{1}{2\lambda}}$$

- A message is important if it's read/replied/starred/marked within a time limit.
- λ is a regularisation parameter that controls “aggressiveness”.
- ϵ is the “passiveness”, related to the hinge loss.

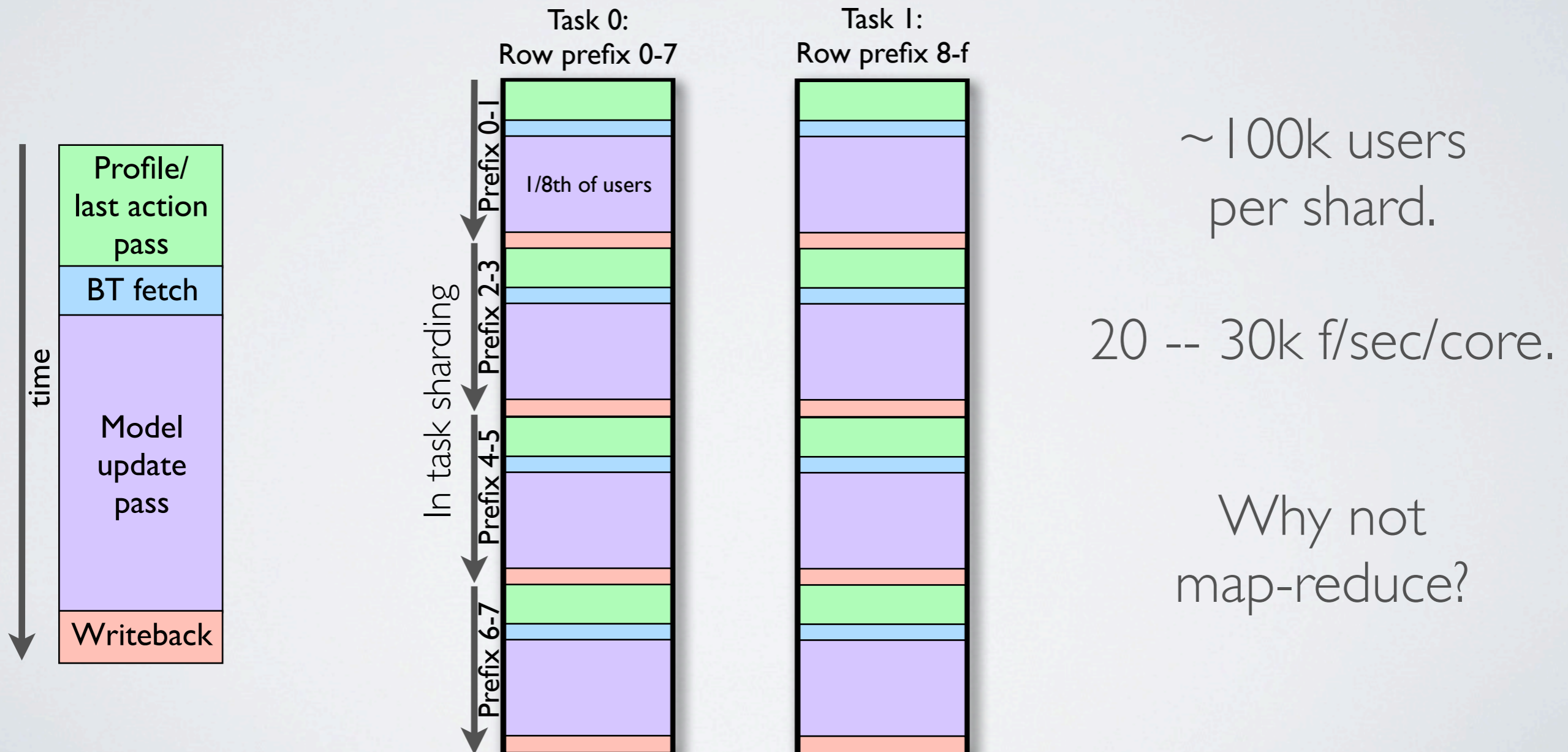
SIMPLE TRANSFER LEARNING

- **Glut** of data globally, **dearth** of data per user.



SCALING

Row key prefix is user ID.
But fast Bigtable reads are not in row order!



FEATURES

~200 global features + personal

Social features

Content features

Thread features

Label features

Spam features

