

Class 16

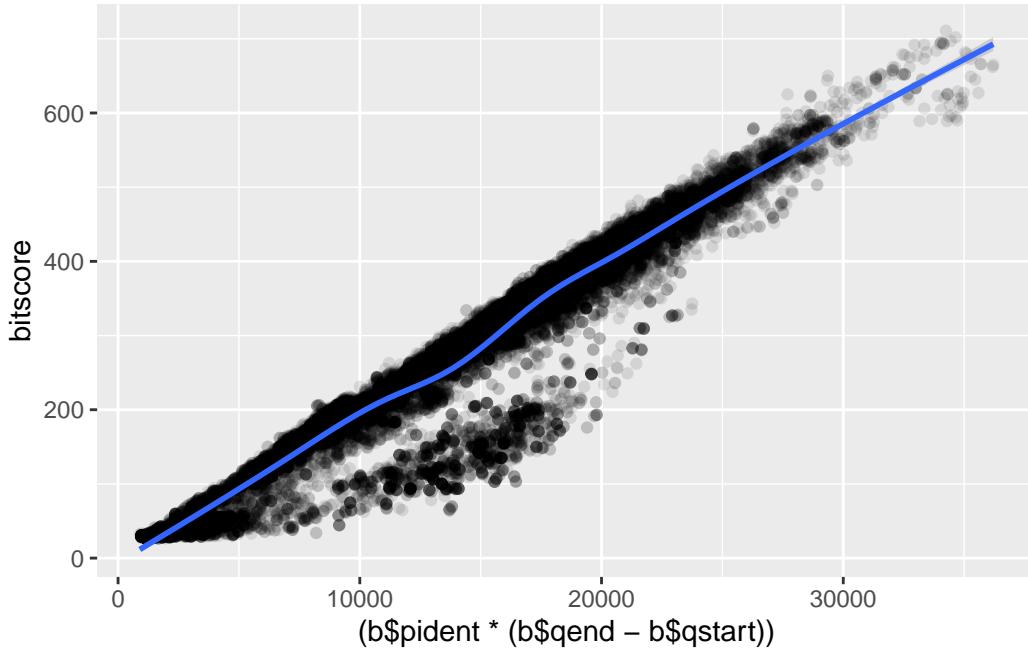
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Plot my results

```
library(readr)
b <- read_tsv("my_results.tsv", col_names = c("qseqid", "sseqid", "pident", "length", "mismat...  
  
Rows: 39830 Columns: 12  
-- Column specification -----  
Delimiter: "\t"  
chr (2): qseqid, sseqid  
dbl (10): pident, length, mismatch, gapopen, qstart, qend, sstart, send, eva...  
  
i Use `spec()` to retrieve the full column specification for this data.  
i Specify the column types or set `show_col_types = FALSE` to quiet this message.  
  
library(ggplot2)  
  
ggplot(b, aes((b$pident * (b$qend - b$qstart)), bitscore)) +
  geom_point(alpha=0.1) +
  geom_smooth()  
  
`geom_smooth()` using method = 'gam' and formula = 'y ~ s(x, bs = "cs")'
```



Lab 16 Questions for Gradescope

Q1. [6pt] List the UNIX bash shell commands to:

- 1.1 open a secure shell on a remote machine: ssh josephgirgiss@biglabcluster.ucsd.edu
- 1.2 make a new folder in your home area called “test”: mkdir ~/test
- 1.3 download this file “<https://files.rcsb.org/download/5P21.pdb.gz>”: curl -O <https://files.rcsb.org/download/5P21.pdb.gz>
- 1.4 unzip/decompress it the file: gunzip 5P21.pdb.gz
- 1.5 print to screen the first 6 lines: head -6 5P21.pdb
- 1.6 print to lines beginning with ATOM to a new file called “coords.pdb”: grep “^ATOM” 5P21.pdb > coords.pdb

Q2. [3pt] List the UNIX commands to copy securely the file “myaln.fa” in your current working directory to your home area on the remote machine “biglabcluster.ucsd.edu”:

```
scp myaln.fa josephgirgiss@biglabcluster.ucsd.edu:~
```

Q3. [1pt] The alignment file “myaln.fa” is not in your current working directory but it is in your “Downloads” directory. Write the R code to import this alignment to the named object “aln” using a function from the bio3d package.

```
library(bio3d) aln <- read.fasta("~/Downloads/myaln.fa")
```