Summary

- Relevance(q,d) = p(R=1|q,d) ➔ p(q|d,R=1)

- **Query likelihood** ranking function: f(q,d)=p(q|d)
  - Probability that a user who likes d would pose query q

- How to compute p(q|d)? How to compute probability of text in general? ➔ Language Model

$$p(\mathbf{q}= \text{"presidential campaign"}|\mathbf{d}= \boxed{\text{... } \textbf{news} \text{ of } \textbf{presidential campaign} \text{ ... } \textbf{presidential} \text{ candidate ...}})$$