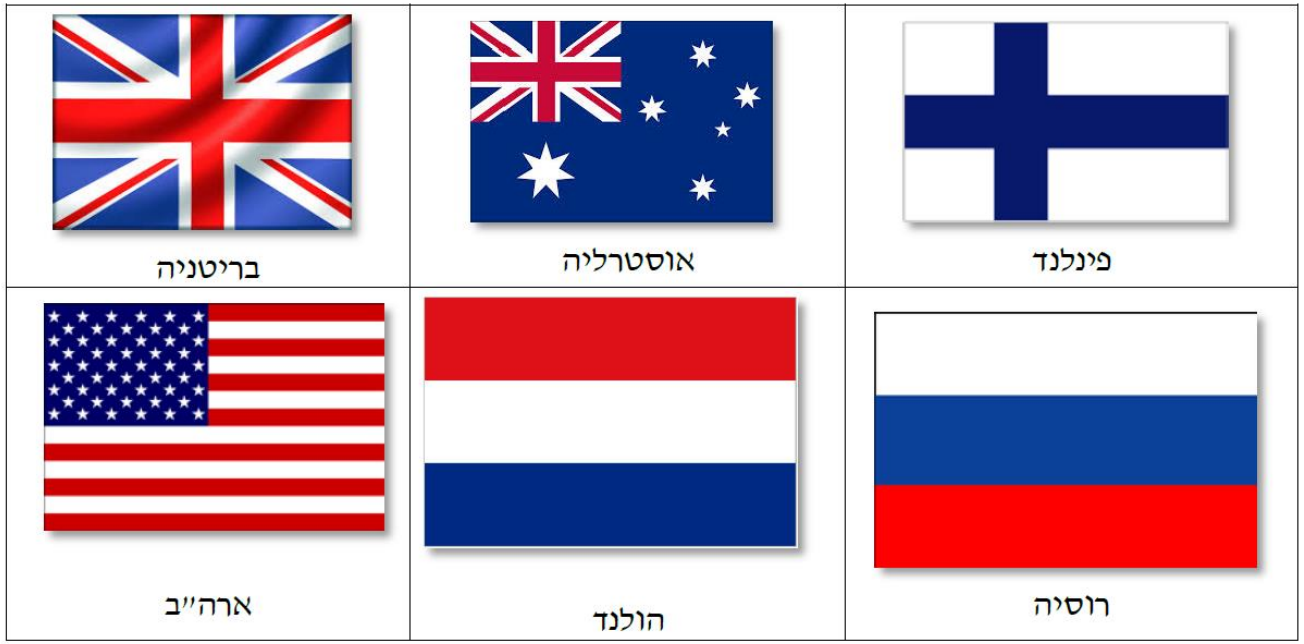
Algorithms and applications in computer vision, Spring 2021, Quiz #3
Due: April 19, 1:00AM

A researcher is thinking to design a bag of words algorithm for flags detection.
Describe the pros and cons of the methods in this case. Below are some flag images you can use.



Below is a text from the web, and a likelihood histogram for two document classes. Assuming a uniform prior distribution over document classes, use a naïve base classifier to determine the topic of this text.

"In France tourism is a major industry. France is the world's leading tourist destination. Not only is it situated at the heart of western Europe, bordering on all the larger countries in the region - Italy, Spain, Germany, Belgium, Switzerland and - across the straits of Dover - the UK; it also has Europe's second busiest airport - Paris Charles de Gaulle airport - and dozens more airports with international connections.

As a country, France offers a fabulous historic heritage and probably the most diversified natural environment of any country in Europe. Its tourist attractions illustrate the history of the human race, from the prehistoric sites of Cro Magnon to the steel and glass of the Futuroscope; they include fine vestiges of all European civilisations, from the prehistoric megaliths of Carnac and the Roman remains of Provence, through medieval castles and cathedrals, to the splendours of Versailles, the nineteenth century Eiffel Tower, or the resolute modernity of the TGV.

In addition, France has the necessary tourism infrastructure to cope with its status as leading tourist destination - more hotels and campsites than any other country of Europe, probably more gites or holiday cottages, the best and most modern rail network in Europe, and a fine system of motorways linking all main towns and cities. . "

$p(x_j|z_i)$ words

		Tourism x_1	castle x_2	history x_3	hotel x_4
classes	tourism z_1	0.25	0.125	0.125	0.5
	history z_2	0.0384	0.384	0.384	0.192