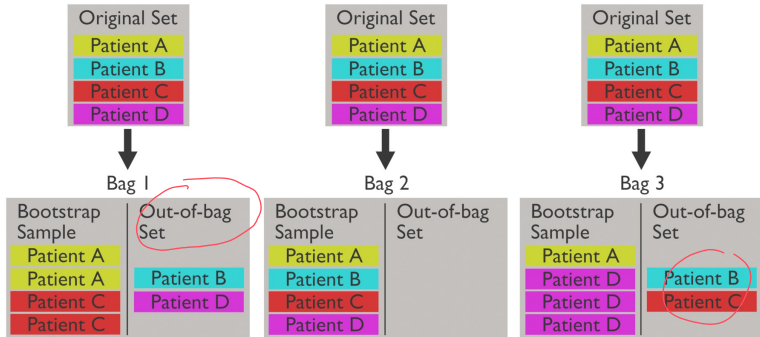


## Out of Bag Errors



Source: Wikipedia

- ▶ Find all models (or trees, in the case of a random forest) that are not trained by the OOB instance.
- ▶ Take the majority vote of these models' result for the OOB instance, compared to the true value of the OOB instance.
- ▶ Compile the OOB error for all instances in the OOB dataset.

	Truth	Tree 1	Tree 2	Tree 3	Tree 4	Tree 5	oob prediction	
A	Survived =	✓	Survived	✓	S	✓	S =	correct!
B	Not S	S	✓	N	✓	S	S	not correct
C	Survived	✓	✓	S	Not S	Not S	Not S.	not correct
D	not Survived	Not S	Not S	✓	✓	✓	Not S.	correct

For observation A, we will use Tree 2, Tree 4 to make a oob  
(out of bag)  
prediction

$$\text{oob error (misclassification rate)} = 2/4 = 50\%$$