Anomaly Detection

For which of the following problems would anomaly detection be a suitable algorithm?

(i) Given an image of a face, determine whether or not it is the face of a particular famous individual.
Conclusion This problem is more suited to traditional supervised learning, as you want both famous and non-famous images in the training set.

(ii) In a computer chip fabrication plant, identify microchips that might be defective.
Conclusion The defective chips are the anomalies you are looking for by modeling the properties of non-defective chips.

(iii) Given a dataset of credit card transactions, identify unusual transactions to flag them as possibly fraudulent.
Conclusion By modeling "normal" credit card transactions, you can then use anomaly detection to flag the unusuals ones which might be fraudulent.

(iv) From a large set of hospital patient records, predict which patients have a particular disease (say, the flu).
Conclusion Anomaly detection would not be appropriaate, as you want to train on both types of patient records rather than modeling one as "normal."