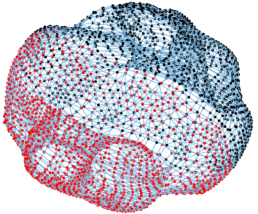
Isomorphism between sparse matrix (pattern) and a graph: $G = \{V, E\}$ where

$$V = \{v_1, \ldots, v_n\}$$
$$E \subseteq V \times V$$



From a sparse matrix to a graph:

- To each row i there corresponds a vertex v_i;
- To each coefficient a_{ij} there corresponds an edge (v_i, v_j);

From a graph to a sparse matrix (pattern): same as above.

Note: numbering of vertices induces a different pattern (symmetric permutation)