INFORMATION SECURITY IN IOT

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The Internet of Things or IoT refers to physical devices that are connected to the Internet, all collecting and sharing data, turning anything into an IoT component. For IoT security, fundamental algorithms are applied to find the physical location of a node in a network [1] that are based on the Delaunay triangulation and the Voronoi diagram. For S, a set consisting of a number n of nodes in the plane, any triangulation of S consists of $2n-2-k$ triangles and $3n-3-k$ edges, where n is the number of nodes in the set S and k is the number of nodes that are part of the convex cover. The Delaunay triangle of a set of data points S is defined by the following property: any circle circumscribed to one of the component triangles of the triangulation does not contain any other point of the set within it. A Delaunay triangulation is actually the dual graph structure associated with a Voronoi diagram.

The main properties of a Delaunay triangulation are [2]:

- The meeting of the triangles in the triangulation represents the convex coverage of the set S;

- Each triangle belonging to the triangulation corresponds to a vertex of the Voronoi diagram;

- The triangles in the Delaunay triangulation that have a side located on the boundary of the convex coverage of S correspond to an infinite (semi-straight) side of the Voronoi diagram.

References:

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2. GE. Blelloch, GL. Miller, D. Talmor. *Developing a Practical projection-Based Parallel Delaunay algorithm.* Proc of the 12th Annual Symposium on Comput. Geometry, ACM, 1996.