

Radial Basis Function in Sustaining the Activities of Creative Industries

Kuswara Setiawan

Faculty of Computer Science, Universitas Pelita Harapan, Indonesia

kuswara.setiawan@uphsurabaya.ac.id

Abstract

The Radial Basis Function (RBF) is a type of artificial neural networks that is based on supervised learning. Past studies have shown that RBF can be used in modeling nonlinear data and trained in one stage rather than using an iterative process. It also has good predictive capabilities. An RBF was created to help address the information management needs of the creative industries in the city of Sidoarjo in Indonesia. These industries consist of small local enterprises that manufacture bags, shoes and jackets from leather using variety of creative designs. The design models from each of these products, however, changes with fashion trends. To ensure the sustainability of the creative industries, the small local enterprises have to closely monitor three sets of variables, namely, source of cost, order arrangement for raw materials and the precision of production time. Historical data has sufficiently been archived, but the difficulty in the determination of these three variables still prevails. The RBF theory proposes that training data, which belongs to historical data, be clustered into several groups in order to ensure that only the necessary historical data becomes training data. Furthermore, a Gaussian Matrix was designed so that every time a problem occurs, RBF will be able to overcome it by producing output which is expected to closely resemble reality.