Support Vector Machines for flood forecasting

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Flooding is an extreme natural phenomenon, which can endanger lives and cause serious damage to structures, infrastructure, and the environment. Major flooding events, such as Penzance (New Year 2003), Boscastle (2004) and North Yorkshire (2005), have always attracted national and international media attention. Climate change would certainly exacerbate the flooding problems in the UK and many other countries in the world. As a result, accurate and timely forecasting of floods, which has always been of a very high priority on the civil engineers' to-do-list, would significantly reduce the flood risks to people, property and the environment. However, in spite of decades of hard work, accurate flood forecasting is still very difficult and engineers haven't found the magic model which can work well in all kinds of situations. This poster presents an attempt of using Support Vector Machines to tackle this challenging problem. SVM is a technique based on AI (Artificial Intelligence) which is very different to the traditional hydrological/hydraulic models. The work is very novel and has discovered many intriguing results. Although SVM would not be a panacea in flood forecasting, it certainly is very promising as a new and alternative tool in the field.