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## **A PRIORITY-BASED COLLABORATIVE ARCHITECTURE FOR NONLINEAR SYSTEM IDENTIFICATION**

### **Description:**

- 1) Study of the nonlinear modeling using the functional link adaptive filter (FLAF) and its possible expansion types [1].
- 2) Get some practice with the Matlab code, by try to implement FLAFs with different expansion types in different nonlinear system identification scenarios, similarly to [1], trying to understand in what kind of scenarios each FLAF achieves its best performance.
- 3) Study the priority-based FLAF architecture [2] and repeat experiments of 2) choosing a suitable priority order for the FLAFs.

### **Topics:**

Nonlinear System Identification

### **References:**

- [1] D. Comminiello, S. Scardapane, M. Scarpiniti, R. Parisi, and A. Uncini, “**Functional Link Expansions for Nonlinear Modeling of Audio and Speech Signals**”, IJCNN 2015.
- [2] D. Comminiello, “**A Priority-Based Collaborative FLAF Exploiting Different Functional Link Expansions**”, Lecture Notes, 2014.
- [3] A. Uncini, “**Neural Networks – Course Lectures**”, 2016.

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