Abstracts

Robust training of microwave neural models

V.K. Devabhaktuni, Changgeng Xi, Fang Wang and Qi-Jun Zhang. "Robust training of microwave neural models." 1999 MTT-S International Microwave Symposium Digest 99.1 (1999 Vol. I [MWSYM]): 145-148 vol.1.

Neural networks have recently gained attention as a fast and flexible vehicle for microwave modeling, simulation and optimization. A new training algorithm based on Huber-norm and quasi-Newton optimization is proposed. The Huber quasi Newton (HQN) algorithm can robustly train a neural network in the presence of large errors in training data. A multi-stage training algorithm that incorporates the HQN technique and an adaptive macro-training process, is proposed to address highly nonlinear and non-smooth modeling problems. The advantages of the proposed microwave-oriented neural network techniques are demonstrated through examples.

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