Differentiable DSP and its Underlying Symmetries

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Inverse problem: $y = x^2$
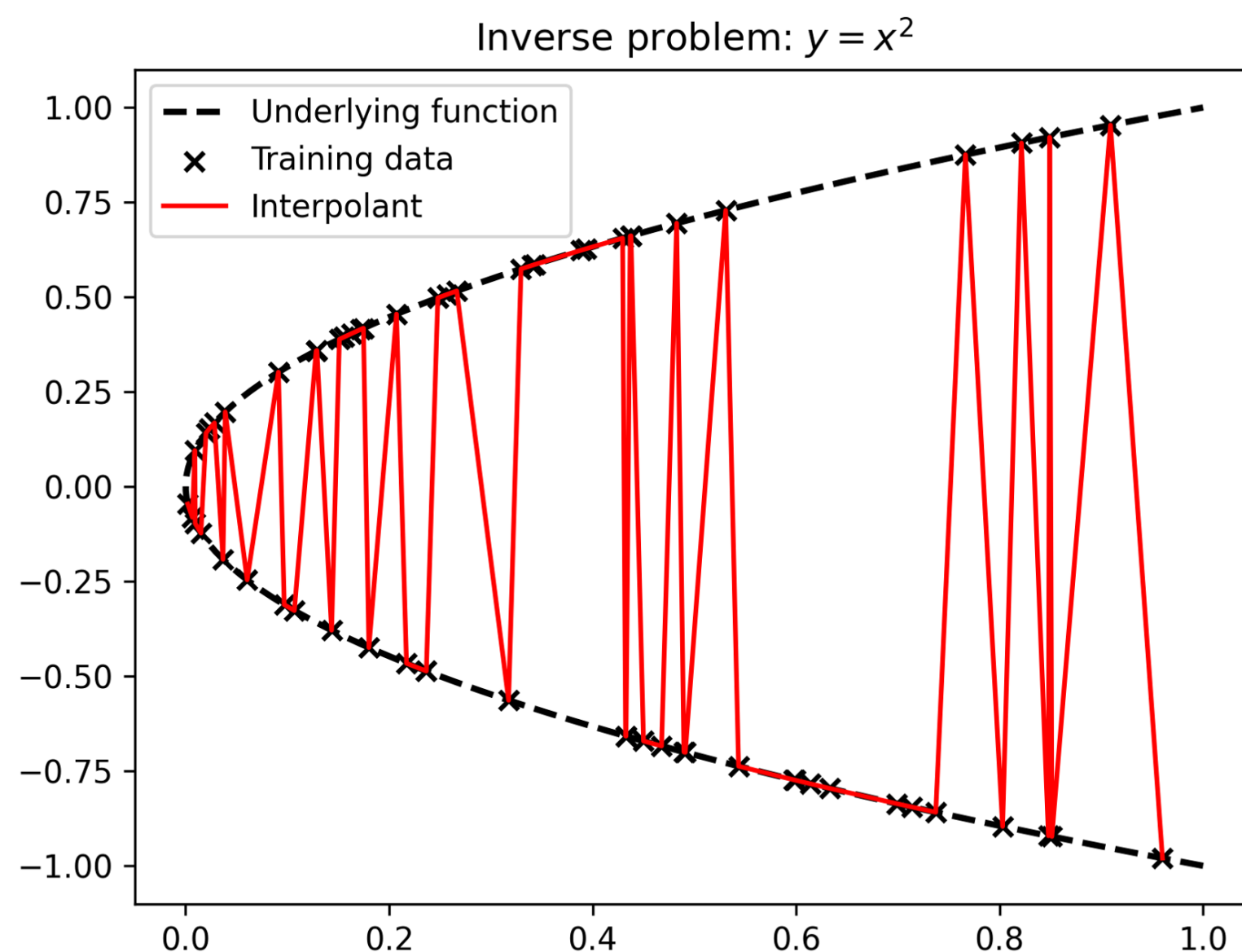
Finding

In DDSP, if the signal processor is invariant under certain transformations of its parameters, we will observe either (i) failure to converge or (ii) degraded performance. We have found three classes of symmetry that can be solved through carefully designed symmetry breaking: 1. Periodicity/aliasing 2. Permutation 3. Dead parameters

Question

How can we automatically discover and break symmetries in DDSP models?

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