Neural Classification of Asymptotic (In)Dependence

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1 Feature maps from `nnadic`

Below (Figures 1 and 2) are the outputs of our feature network $\boldsymbol{\psi}$ on one dataset. Each plot shows a single feature that is averaged in $\boldsymbol{A}$ and used as an input into ϕ to classify the dataset. Some features (e.g., feature 10) are unsurprising; they distinguishing between points where both components are large and points where one component is large. Other features (e.g., features 1 and 6) highlight certain angular regions. We note that several features appear to be copies and/or reflections of other features (e.g., features 2, 3, and 7). In Figures 3 and 4 we show the output of our feature network $\boldsymbol{\psi}$ when the input is an evenly spaced grid of points. This enables us to see the entire feature surfaces.

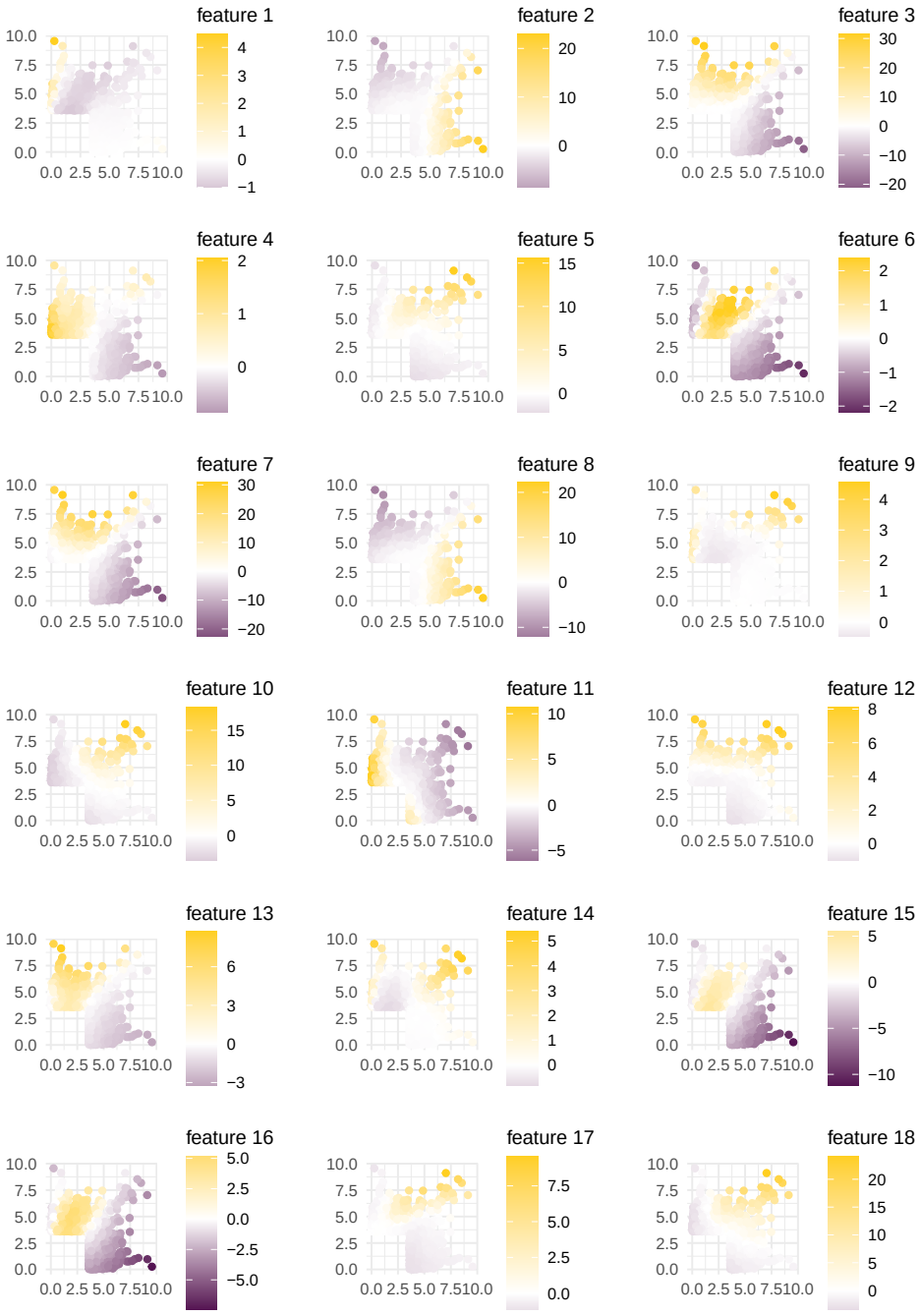

Fig. 1: Output from the feature network ψ. Feature numbers refer to the matrix column, order is not relevant. Shown are features 1 through 18.

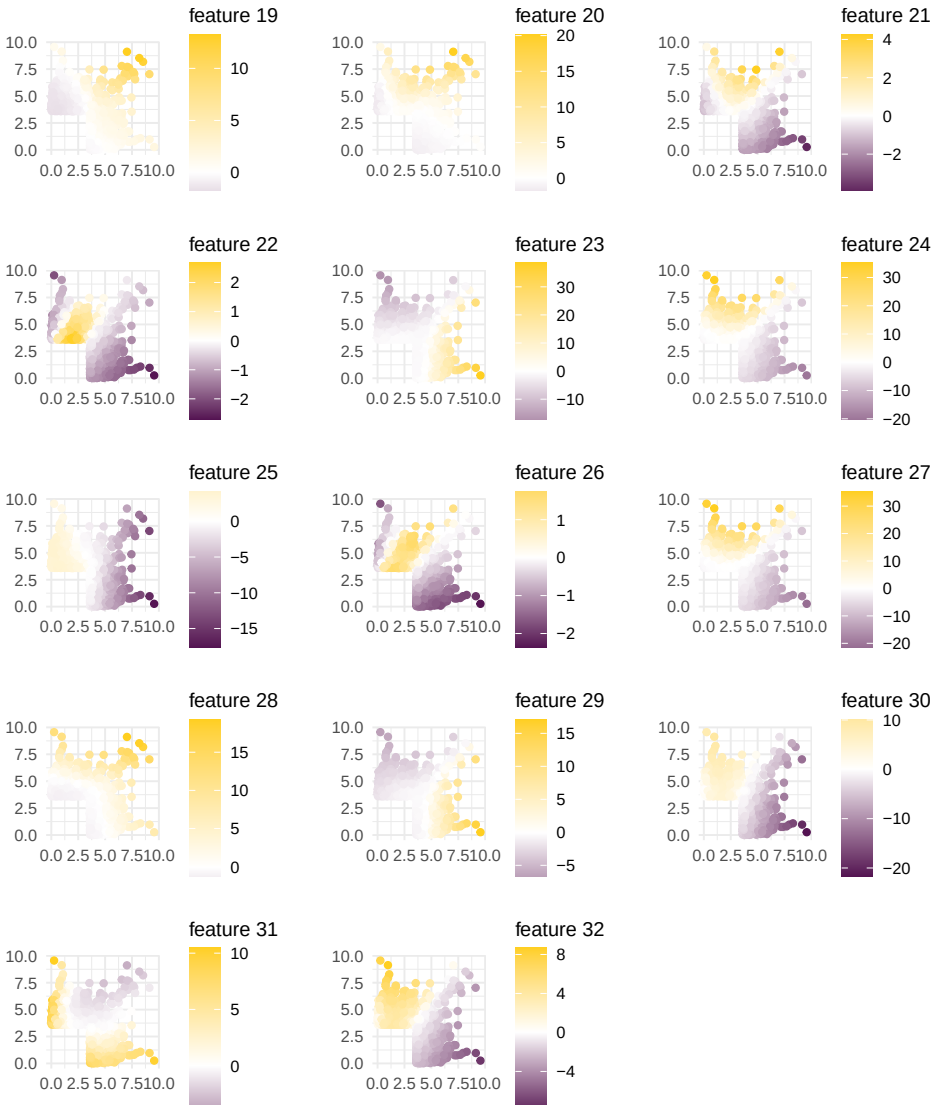

Fig. 2: Output from the feature network ψ. Feature numbers refer to the matrix column, order is not relevant. Shown are features 19 through 32.

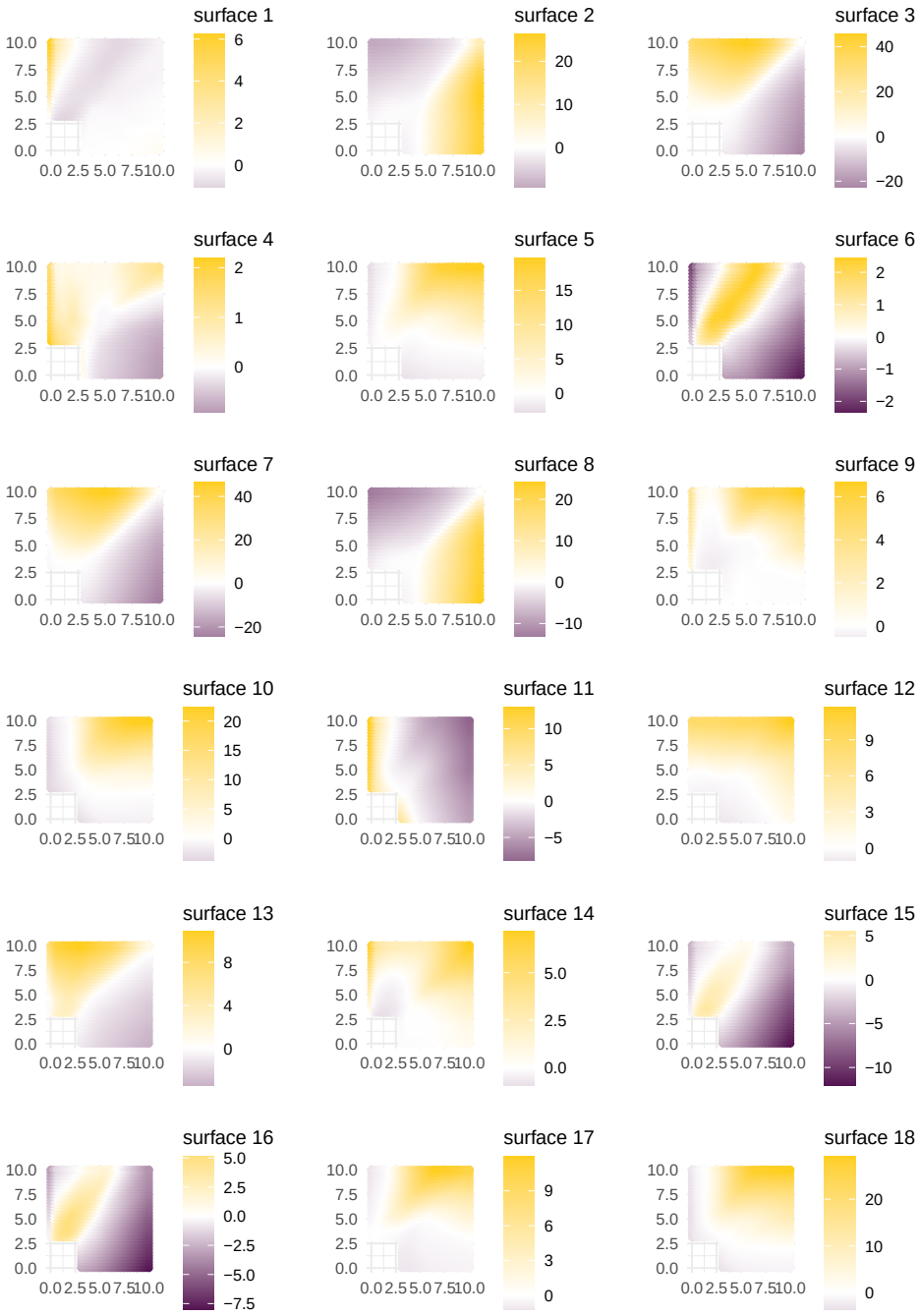

Fig. 3: Output from the feature network $\boldsymbol{\psi}$ evaluated on a grid of points. Shown are features 1 through 18.

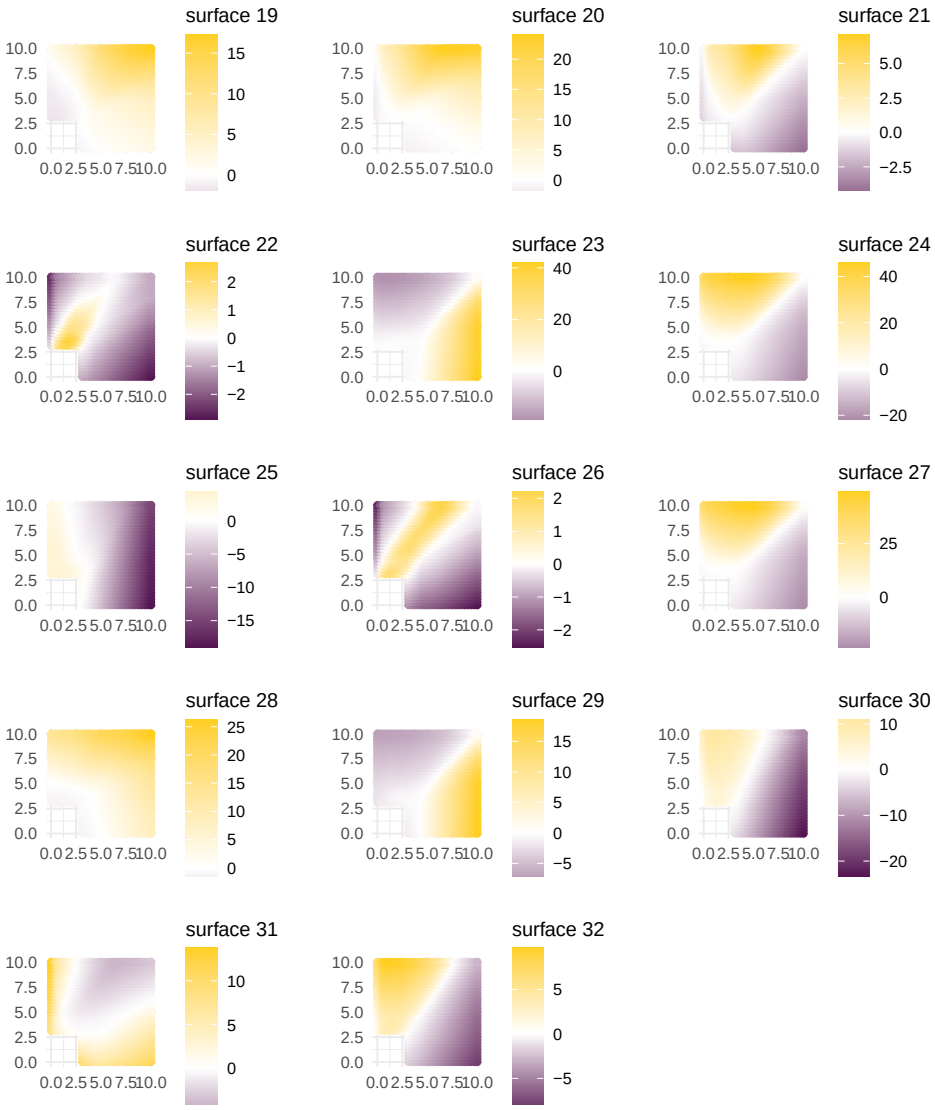

Fig. 4: Output from the feature network ψ evaluated on a grid of points. Shown are features 19 through 32.