Aprendizagem Computacional - Trabalho Prático 3

João Tiago Márcia do Nascimento Fernandes - 2011162899
Joaquim Pedro Bento Gonçalves Pratas Leitão - 2011150072

18 de Novembro de 2014

Índice

1 Introdução

O presente trabalho foca-se na previsão e identificação de crises epiléticas, com base em informação de sinais cerebrais, recolhidos através da realização de um *EEG* (ElectroEncefaloGrama).

Este exame recolhe dados relativos à atividade cerebral do paciente que o realiza, sendo possível extrair um conjunto de características que permite a identificação de momentos de ocorrência de crises epiléticas (denominadas situações *ictais*) e de momentos nos quais o paciente não apresenta qualquer problema (denominadas situações *não-ictais*).

O trabalho proposto visa a criação de uma aplicação em *Matlab*, que analise os dados recolhidos após a realização de um *EEG* a um paciente, e que identifique eventuais situações em que a atividade cerebral registada corresponde a uma situação de crise epilética.

Para proceder à identificação das situações *ictais* e *não-ictais*, a aplicação desenvolvida faz uso, na sua arquitetura interna, de redes neuronais, disponíveis na *Neural Networks Toolbox* do próprio *Matlab*.

Para avaliar o desempenho e performance da aplicação desenvolvida, procederemos à análise da sensibilidade e especificidade de cada rede neuronal implementada.

Estas métricas correspondem à percentagem de situações *ictais* verdadeiras detetadas (*sensibilidade*) e à percentagem de situações *não-ictais* falsas detetadas (*especificidade*), refletindo a performance da rede na classificação de um dado *data set*: Uma elevada *sensibilidade* implica uma boa deteção de situações *ictais*, enquanto que uma elevada *especificidade* implica uma boa deteção de casos *não-ictais*.

Ambas as métricas constituem requisitos necessários para a sua utilização em ambiente clínico, e podem ser definidas da seguinte forma:

$$Sensibilidade = \frac{PositivosVerdadeiros}{PositivosVerdadeiros + FalsosNegativos}$$

$$Especificidade = \frac{NegativosVerdadeiros}{NegativosVerdadeiros + FalsosPositivos}$$

No presente documento pretendemos apresentar de forma mais detalhada a aplicação desenvolvida, discutindo alguns detalhes da sua implementação e apresentando uma reflexão crítica sobre o seu desempenho e performance, nomeadamente da sua sensibilidade e especificidade.

2 Aplicação Desenvolvida

Tal como referido anteriormente, a aplicação desenvolvida visa analisar os dados referentes a um *EEG* de um paciente, identificando situações correspondentes a uma crise epilética.

Esta classificação pode ser realizada de duas formas distintas, que passamos a descrever.

Numa primeira abordagem, a que chamamos *Classificação Individual*, é atribuído a cada elemento do conjunto de dados de entrada da aplicação uma de duas *classes*, representadas por dois valores binários:

- Classe *não-ictal*, correspondente a um estado normal do paciente (ausência de crises) e representada pelos valores *1 0*
- Classe *ictal*, correspondente a uma situação de crise, e representada pelos valores *0 1*

Na segunda abordagem, a que chamamos *Classificação em Grupo*, o processo de classificação das entradas é realizado de forma semelhante, no entanto são considerados conjuntos de dados de entrada da aplicação, ao invés de cada elemento. Para este tipo de classificação podemos adotar duas métricas diferentes:

- Analisar o número de elementos consecutivos classificados individualmente como *ictais*, comparando-o com um dado limiar. Neste caso, se, por exemplo, existirem pelo menos 10 elementos consecutivos classificados como *ictais* então é detetada uma crise. Caso contrário nenhuma crise é detetada.
- Adotar um sistema de classificação em janela deslizante, analisando o número de elementos classificados individualmente como *ictias*, num dado universo restrito. Isto é, se pelo menos cinco dos últimos dez elementos foram classificados como *ictais* então todos os elementos nesse conjunto são classificados como *ictais*.

Optámos por adotar o segundo método de *Classificação em Grupo*, considerando uma abordagem por janelas, uma vez que o primeiro método, na nossa opinião, não torna o classificador resistente a variações no tempo. Isto é, caso a saída obtida seja igual à esperada, mas com todos os elementos deslocados, por exemplo, em uma unidade este método irá considerar um número de classificações erradas muito maior do que numa abordagem por janelas.

De seguida apresentamos em maior detalhe a aplicação desenvolvida, salientando alguns dos seus aspetos mais importantes e relevantes.

2.1 Graphical User Interface

Para facilitar a interação do utilizador com a aplicação, foi-nos proposta a criação de uma interface gráfica onde são solicitadas ao utilizador todas as informações relevantes para a execução da aplicação, separando por completo

a sua lógica interna com a especificação dos seus dados de entrada e outros parâmetros.

Assim, na interface gráfica desenvolvida são solicitadas ao utilizador várias informações que permitem a criação e treino das diferentes redes neuronais, nomeadamente:

- Tipo de rede neuronal a criar e treinar. Encontram-se disponíveis as redes *Radial Basis Function*, *Layer Recurrent Network*, *FeedForward*, *Feed-Forward Time Input Delay* e *Distributed Time Delay*.
- Função de Aprendizagem (ou Função de Treino) a utilizar na rede neuronal a criar (Se necessário). Encontram-se disponíveis as funções *trainscg*, *traingd* e *trainrp*.
- Função de Performance a utilizar no treino da rede neuronal (se necessário). Estão disponíveis as funções *mse* (mean squared error) e *sse* (sum squared error).
- Função de Activação dos neurónios da rede neuronal a implementar (se necessário). Estão disponíveis as funções *hardlim*, *purelin*, *logsig* e *tansig*.
- Tipo de Classificação a realizar (*Individual* ou *Em Grupo*)
- Ficheiro de dados a utilizar para treinar a rede criada
- Ficheiro de dados a utilizar para testar a rede criada
- Número de características dos pacientes a considerar
- Outros aspetos, como objetivo do treino (*Goal*), taxa de aprendizagem, etc

Para além disso, na interface desenvolvida, existe também uma secção onde são apresentados os resultados de cada teste realizado, nomeadamente a especificidade e sensibilidade da rede considera.

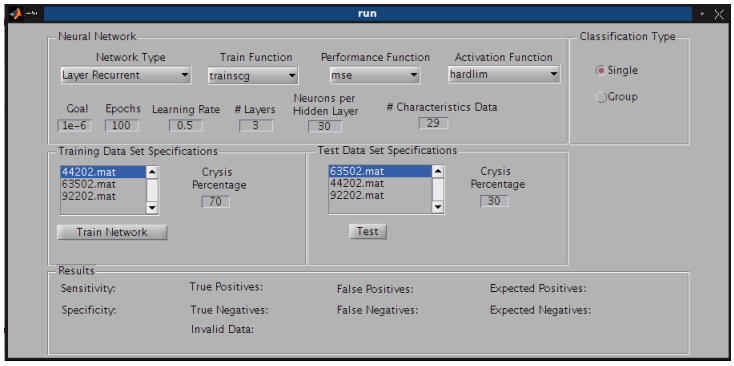

Figura 1: Interface Gráfica implementada

2.2 Redes Neuronais Implementadas

Como já referimos anteriormente, na nossa aplicação implementámos cinco redes neuronais distintas: *Radial Basis Function*, *Layer Recurrent Network*, *FeedForward*, *FeedForward Time Input Delay* e *Distributed Time Delay*.

Estas redes apresentam, naturalmente, características e propriedades distintas, sendo que umas se adequam mais ao trabalho que pretendemos realizar do que outras.

Por exemplo, considerando a rede *Layer Recurrent*, esta rede permite a introdução de atrasos em algumas características, o que lhe permite aprender a prever qualquer saída dinâmica, tendo por base entradas passadas. Este processo é possível se forem considerados neurónios e atrasos suficientes na rede.

De facto, esta é uma propriedade que vai, de certa forma, ao encontro do funcionamento de um cérebro humano, que para além de ser um sistema dinâmico, possui também memória.

Na mesma linha de raciocínio, redes que suportam a introdução de atrasos em algumas das características que constituem os dados de entrada surgem, a uma primeira vista, como boas opções para simular o comportamento de um cérebro humano, realizando uma melhor identificação das situações correspondentes a crises epiléticas. Exemplos destas redes são a rede *Distributed Time Delay* e a *FeedForward Input Time Delay*.

Por seu turno, a rede *FeedForward* também se apresenta como uma solução a considerar, dado o facto de permitir uma boa implementação de qualquer função de entradas e saídas arbitrárias, desde que considerados neurónios suficientes na(s) camada(s) escondida(s).

Por fim, é também necessário referir a rede *Radial Basis Function*, bastante utilizada para aproximar funções e cujo treino passa nomeadamente pela adição de neurónios à camada escondida até que a rede atinja a performance (*goal*) pretendida. Assim, embora possa ser necessário adicionar um elevado número de neurónios à camada escondida, acreditamos ser possível ter uma boa performance com esta rede.

2.3 Treino das Redes

Um dos principais aspetos do trabalho realizado, prende-se com o treino das redes neuronais, pois é ele que determina a boa (ou má) performance das redes implementadas.

Para o presente trabalho foram-nos fornecidos dados relativos a três pacientes, constituídos por um conjunto de características extraídas para cada elemento, e pela respetiva classe definida para cada elemento.

Uma vez que as situações em que os pacientes estão a sofrer de uma crise epilética são consideravelmente menos do que as situações em que o paciente não apresenta nenhum problema, a simples seleção de todos os elementos de um dos conjuntos fornecidos, ou de parte desses elementos, para realizar o treino da rede, sem qualquer cuidado na seleção dos elementos irá conduzir a dados de treino onde predominam situações *não-ictais*.

Nesses casos, iremos verificar uma especialização da rede na identificação de situações *não-ictais*, sem que faça uma classificação de casos *ictais* igualmente fiável.

De facto, tal situação não é desejável, uma vez que o nosso principal objetivo passa pela identificação de casos *ictais* com um grau de confiança mínimo, não a identificação de situações *não-ictais*.

Assim, para evitar que as redes por nós treinadas se especializem em situações *não-ictais*, na constituição dos casos de treino das diferentes redes neuronais, consideramos um dos ficheiros fornecidos, e para esse ficheiro selecionamos uma percentagem dos casos *ictais* (essa percentagem é solicitada ao utilizador através da interface gráfica) que vamos incluir no nosso *data set* de treino.

Em seguida, selecionamos um número igual de situações *não-ictais*, preservando a ordem dos diferentes casos nos dados originais. Como o número de situações *não-ictais* é bastante superior ao número de situações *ictais*, ao selecionarmos um número de situações *não-ictais* igual ao de situações *ictais* temos, necessariamente de não incluir a maior parte das situações *não-ictais*.

Para além disso, consideremos duas características observadas em dois momentos distintos do exame: Uma, observada num momento em que o paciente se encontra clinicamente estável (portanto numa situação *não-ictal*); E outra, observada instantes antes da ocorrência de uma crise.

Embora ambas as situações sejam classificadas como *não-ictais*, facilmente compreendemos que a segunda se encontra mais próxima de um estado *ictal*, do que a primeira. Efetivamente, para evitar que as redes por nós treinadas classifiquem estas duas situações apresentadas com diferentes valores (atribuindo à primeira a classificação de *não-ictal* e à segunda de *ictal*), é necessário incluir, nos dados de treino das redes, uma porção de características que reflitam ambas as situações apresentadas, a par das situações *ictais*.

Assim, para fazermos a seleção dos dados de treino das nossas redes, selecionamos aleatoriamente um conjunto de situações *não-ictais* do conjunto de dados originais, preservando sempre a ordem de ambas as situações *ictais* e *não-ictais*, e assegurando a inclusão de exemplos referentes às duas situações apresentadas.

No processo de treino das redes recorremos ainda a diferentes funções de treino, disponíveis e implementadas pela *Neural Network Toolbox* do *Matlab*. As funções de treino disponíveis são a função *traingd*, *trainscg* e *trainrp*.

Com exceção da rede *RBF* (*Radial Basis Function*) implementada, o treino das restantes redes neuronais é realizado com recurso à função *train* da *Neural Network Toolbox* do *Matlab*. Uma vez que o treino das redes é uma operação complexa e exigente em termos computacionais, tendo em conta o tipo de redes criadas e a dimensão dos dados para proceder ao treino das redes, estas foram treinadas com aceleração gráfica, disponível nas versões mais recentes do *Matlab*. Para tal, basta adicionar os parâmetros *'useGPU', 'yes'* aquando da chamada da função *train*: *train(network, P, T, 'useGPU', 'yes')*.

Para a rede *RBF*, o *Matlab* realiza o seu treino aquando da criação da rede, não sendo necessária a invocação da função *train*.

2.4 Teste das Redes

Uma vez completo o treino de uma rede neuronal, esta pode ser testada, de forma a verificar o seu bom, ou mau, funcionamento. Para isso, criámos um conjunto de dados de teste, baseados nos três *data sets* inicialmente fornecidos.

O processo de criação dos dados de teste é semelhante ao utilizado na constituição dos dados de treino das redes neuronais:

É solicitado ao utilizador que indique o ficheiro (de entre os três ficheiros fornecidos) de onde serão extraídos os dados de teste, e qual a percentagem de situações *ictais* a incluir. Em seguida, o ficheiro escolhido é analisado, e são considerados todos os dados nele presentes, a partir do final do ficheiro, até que o número de situações *ictais* incluídas seja igual à percentagem especificada.

Por outras palavras, se o utilizador especifica que pretende incluir 25% das situações *ictais* nos dados de treino, e se todas as situações *ictais* identificadas nesse *data set* se encontram nas posições $10-20$, $40-50$, $60-70$ e $80-100$, então o nosso *data set* de treino será constituído por todos os elementos do ficheiro, desde a posição 60 até ao final do ficheiro.

Uma vez que aquando da realização dos testes na rede esta já se encontra treinada, é irrelevante considerarmos nos *data sets* de teste situações *ictais* na mesma ordem de grandeza do que situações *não-ictais*, pois apenas estamos a executar a rede para um conjunto de dados, sem que este afete de forma alguma o funcionamento da rede em situações futuras.

2.5 Implementação em Matlab

A aplicação foi por nós desenvolvida e programa quase na sua totalidade, com a exceção do código relativo à interface gráfica. Esta foi desenhada por nós através da interface *guide* do *Matlab*, tendo o seu código sido gerado pelo *Matlab*.

De qualquer forma, toda a lógica interna da aplicação, comunicação da informação recolhida pela interface gráfica para outras estruturas, etc, foi por nós completamente desenvolvida.

2.5.1 run.m

Este é o principal ficheiro da aplicação e que permite a sua execução. É nele que se encontra todo o código gerado, relativo à interface gráfica, mas também onde todas as principais funcionalidades da aplicação (criação das redes neuronais e respetivo treino e classificação dos dados de teste) são invocadas.

2.5.2 createNetwork.m

No ficheiro *createNetwork.m* encontramos a função *createNetwork*, responsável pela criação da rede neuronal que irá realizar a identificação das situações *ictais* nos dados considerados e fornecidos à aplicação.

Esta rede é criada de acordo com algumas características pré-definidas, e outras escolhidas pelo utilizador, como é o caso das funções de ativação e de treino.

Após a sua criação, a rede será treinada com um conjunto de dados previamente criado de acordo com as especificações fornecidas pelo utilizador. Este treino não é realizado neste ficheiro, mas sim no principal ficheiro desenvolvido para a aplicação, *run.m*.

2.5.3 prepareDataSets.m

Neste ficheiro encontramos a função *prepareDataSets*, responsável pela criação dos *data sets* de treino e e de teste, bem como dos respetivos resultados esperados (quer para os dados de treino, quer para os dados de teste). Para além disso, neste ficheiro é ainda invocado o procedimento responsável pela seleção das principais características registadas, para o paciente em questão, que abordaremos em maior detalhe mais à frente nesta secção.

Tal como referimos brevemente numa secção anterior do presente documento, as abordagens seguidas para a criação dos conjuntos de dados de treino e de teste têm pontos em comum, não sendo, no entanto, completamente iguais.

Uma vez que, nos ficheiros fornecidos, o número de situações *não-ictais* é bastante superior à quantidade de classificações *ictais*, se simplesmente considerarmos para o nosso *data set* de treino uma percentagem dos dados fornecidos, sem nos preocuparmos com a distribuição de situações *não-ictais* e *ictais*, então será altamente provável que as nossas redes sejam treinadas com mais casos *não-ictais* do que com *ictais*, resultando numa especialização da mesma na deteção de situações *não-ictais*.

Efetivamente, tal situação corresponde ao oposto do desejável, tendo em conta que o nosso objetivo principal passa pela identificação de casos *ictais*, com um grau de confiança mínimo.

Assim, para os dados de treino das redes neuronais criadas são consideradas situações *ictais* e *não-ictias* em igual número e de acordo com uma percentagem das situações *ictais* totais do ficheiro a considerar, definida pelo utilizador. Nesta seleção, tal como referido anteriormente, é preservada a posição relativa das situações *ictais* e *não-ictais* consideradas, e assegurando a inclusão de exemplos referentes Às duas situações *não-ictais* apresentadas.

No que respeita aos dados de teste, também criados neste ficheiro, não é necessária qualquer preocupação em relação ao número de situações *ictais* e *não-ictais*, uma vez que pretendemos utilizar estes dados em redes já treinadas, pelo que a sua execução em nada alterará o comportamento futuro da rede.

Assim, os dados de treino são construídos partindo do final de um ficheiro de dados previamente selecionado, incluindo todos os dados (correspondentes a casos *ictais* e *não-ictais*) até que o número de situações *ictais* seja igual a um valor definido pelo utilizador.

2.5.4 processCharacteristics.m

Neste ficheiro podemos encontrar o procedimento responsável pela seleção das principais características registadas, para o paciente em questão.

Esta seleção é feita com base numa análise da correlação entre as diferentes características registadas e a classificação esperada para cada conjunto, selecionando as características que apresentam valores de correlação mais elevados, e em número igual ao especificado pelo utilizador na interface gráfica.

Com este procedimento pretendemos eliminar características redundantes dos nossos ficheiros de dados. Embora seja de prever que esta eliminação em nada altere a aprendizagem da rede (ou, em caso de alteração, que esta seja bastante ténue), é expectável uma melhoria no seu tempo de treino proporcional ao número de características redundantes removidas.

2.5.5 interpretResults.m

É neste ficheiro que se encontra a função *interpretResults*, onde é realizado o processamento da classificação executada pela rede neuronal treinada, nas situações em que o tipo de classificação escolhido é a *Classificação Individual*.

Este processamento consiste simplesmente em percorrer os resultados obtidos na execução da rede neuronal para o caso de teste fornecido, comparando-os elemento a elemento com os resultados esperados para esse caso de teste. Assim, é registado o número de situações em que a classificação da rede se apresenta correta (distinguindo-se entre classificações de situações *ictais* e *não-ictais*), bem como situações em que a classificação da rede está incorreta (também distinguindo-se entre ituações *ictais* e *não-ictais*).

Para além disso, são também registados o número de classificações positivas e negativas, isto é, de situações *ictais* e *não-ictais*, presentes nos dados fornecidos à rede, e que num cenário de classificação perfeita corresponderiam ao número de situações *ictais* e *não-ictais* registadas.

Uma vez que a classificação realizada pela rede nem sempre é clara, podem existir situações para as quais a rede não convergiu, não sendo possível distinguir de forma clara para uma dada situação (ou conjunto de situações) qual a classe atribuída pela rede. Essas situações são também registadas nesta função, sendo posteriormente reportadas como classificações inválidas.

2.5.6 interpretGroupResults.m

O ficheiro *interpretGroupResults.m* é responsável por uma importante parte da lógica subjacente à *Classificação em Grupo* realizada pela aplicação.

Neste ficheiro, a abordagem seguida é em tudo semelhante ao realizado no caso da *Classificação Individual*: Possuindo os resultados esperados para o teste realizado, basta percorrer os dados obtidos como resultado da classificação da rede neuronal, registando as situações em que os dois conjuntos de dados (dados obtidos e esperados) são idênticos (verdadeiros positivos e verdadeiros negativos), bem como situações onde as classificações diferem (falsos positivos e falsos negativos), ou então não são possíveis (classificações inválidas).

2.6 Execução

Para executar a aplicação o utilizador simplesmente necessita de executar o ficheiro *run.m*, sendo imediatamente exibida a interface gráfica desenvolvida.

A partir desse momento, o utilizador poderá escolher a rede a criar e a treinar, definindo algumas das suas propriedades e do seu treino, nomeadamente a escolha do ficheiro de dados a utilizar como fonte para a criação dos dados de treino e para posterior teste da rede treinada. É também possível selecionar o tipo de classificação a realizar, e o número de características a considerar.

Uma vez definidos todos os parâmetros pretendidos pelo utilizador, basta clicar na opção *Train Network*, para proceder ao treino da rede, ou na opção *Test*, para proceder à execução da rede para os dados de teste especificados.

Queremos também salientar a possibilidade de seleção a opção *Test* sem, previamente, ter sido treinada nenhuma rede. Nesse caso, será criada e treinada uma rede de acordo com as especificações para esta definidas na interface. Caso o utilizador não tenha definido nenhuma configuração, será utilizada uma por defeito.

Uma vez finda a execução da rede para os dados de treino selecionados, os resultados dessa execução poderão ser visualizados no painel *Results*, estando disponível a *sensibilidade* e *especificidade* registadas, bem como os dados que permitiram calcular esses valores (verdadeiros positivos e negativos, e falsos positivos e negativos). É ainda apresentado o número de classificações inválidas registadas.

3 Treino e Testes da Aplicação

Após o desenvolvimento inicial da aplicação procedemos ao treino e teste das diferentes redes implementadas, a fim de aferir o seu correto, ou incorreto, funcionamento e da sua adequação às nossas previsões iniciais para a performance de cada rede.

3.1 Testes Iniciais

3.1.1 Descrição

Numa fase inicial dos testes realizados procedemos ao treino de todas as redes neuronais implementadas, para uma vasta gama de combinações possíveis das propriedades das redes consideradas, e para os dois tipos de classificação disponíveis. Assim, inicialmente treinámos as redes com as seguintes propriedades:

- Redes treinadas com os dados dos ficheiros *44202.mat* e *63502.mat*
- Percentagem de situações *ictais* consideradas nos casos de treino de 30%, 50% e 70%
- Objetivo do treino com o valor de 10^{-6}, com exceção da rede *Radial Basis Function*, onde o valor considerado foi de 10^{-2}
- Número de épocas de treino máximo de 1000
- Número de *validation checks* necessários para terminar o treino igual a metade do número máximo de épocas de treino, ou seja 500
- Ritmo de aprendizagem de 0.5
- Rede constituída por 1 camada escondida
- Número de neurónios por cada camada escondida tomando os valores 3, $log_2(29) = 5$ e 29
- Funções de ativação consideradas: *hardlim*, *purelin*, *logsig* e *tansig*
- Funções de treino consideradas: *trainscg*, *traingd* e *trainrp*
- Funções de performance consideradas: *sse* e *mse*

Em anexo a este documento encontra-se uma lista detalhada dos resultados obtidos em cada teste realizado, que poderá ser consultada pelo leitor.

Na lista apresentada optámos por não incluir os resultados relativos aos testes para as redes treinadas com a função *sum squared error* como função de performance, uma vez que as redes treinadas com esta função obtiveram valores de performance registados pela *Neural Network Toolbox* muito superiores aos

registados para as redes treinadas com a função de performance *mean squared error*[1].

Por essa razão, ao procedermos à análise dos resultados obtidos não iremos incidir sobre as redes treinadas com a função de performance *sse*, uma vez que os seus resultados não apresentam grandes diferenças, nem se destacam por realizarem uma classificação aceitável.

De seguida iremos proceder a uma análise mais detalhada sobre os resultados obtidos, começando por incidir nos testes realizados para a *Classificação Individual*, passando de seguida para a *Classificação em Grupo*.

3.1.2 Análise dos Resultados Obtidos para Classificação Individual

Antes de procedermos à análise individual de cada rede implementada e testada pretendemos proceder a uma descrição geral do comportamento das redes neste conjunto de testes.

De uma forma geral, as diferentes redes testadas apresentaram, para pelo menos uma constituição (número de neurónios na camada escondida, objetivo do treino, função de treino, ativação e performance, etc) valores de *especificidade* e *sensibilidade* que consideramos aceitáveis para o trabalho em questão, isto é, iguais ou superiores a 0.7.

De facto, para utilização da aplicação numa situação real consideramos que um valor de 0.7 poderá não ser aceitável, no entanto tendo em conta o objetivo do trabalho, o seu contexto e os dados utilizados, 0.7 parece-nos um valor aceitável.

Outro fenómeno também comum a praticamente todas as redes (com exceção da rede *Radial Basis Function*), tem que ver com o número de classificações inválidas detetadas. Nunca foi registado o valor 0 (novamente, exceto para a rede *Radial Basis Function*), e nas situações em que foram registados valores mais elevados verificou-se uma grande variação dos valores de *especificidade* e *sensibilidade* registados, prevalecendo a *especificidade* das redes em questão.

Concentrando-nos na rede *Radial Basis Function*, podemos verificar que esta obteve muitos dos melhores registos para estes testes, com valores de *especificidade* e *sensibilidade* no intervalo $[0.8, 0.9]$. Efetivamente, esta rede registou piores resultados quando limitada a 29 neurónios.

De facto, seria de esperar que possuindo um número de neurónios igual ao número de características consideradas no treino, a rede realizasse melhores classificações, no entanto tal não se verificou. Não obstante, tal resultado pode também dever-se ao *goal* com que esta rede foi treinado que, por ser bastante reduzido, (apenas 0.02) irá certamente afetar a performance da rede.

Analisando os resultados obtidos para a rede *FeedForward* podemos facilmente constatar que a rede tem uma maior *especificidade* do que *sensibilidade*, uma vez que a primeira toma valores no intervalo $[0.8, 0.9]$ e a segunda no intervalo $[0.6, 0.7]$. Para além disso, foram registados melhores resultados para as redes treinadas com as funções *trainrp* e *trainscg*.

[1] Neste caso, quanto maior for o valor registado para a performance de uma rede pior será o seu desempenho

Ao treinar e testar a rede com dados do ficheiro *63502.mat* verificámos uma melhoria nos valores de *especificidade* registados, que passaram a rondar o 0.9. No entanto, a *sensibilidade* desceu bruscamente, ocorrendo situações onde se registaram valores inferiores a 0.5.

No que diz respeito à rede *Layer Recurrent* a função de treino *trainrp* foi a que registou piores valores de *especificidade* e *sensibilidade*. Nos restantes casos, os valores de *sensibilidade* também não foram demasiado elevados, variando desde os 0.4 até aos 0.7. Para a *especificidade*, já foram registados valores mais elevados, pertencentes ao intervalo $[0.7, 0.9]$.

No treino desta rede com dados do ficheiro *63502.mat*, considerando 3 neurónios e testes com 30% das situações *ictais* com a função *trainrp* verificámos a ocorrência de valores elevados para a *especificidade*, mas bastante baixos para a *sensibilidade*. Mais ainda, registou-se uma situação, para o mesmo ficheiro mas com testes com 70% das situações *ictais*, onde a *especificidade* toma o valor 1 e a *sensibilidade* é nula.

Por fim, as redes *Distributed Time Delay* e *FeedForward Input Time Delay* obtiveram resultados muito próximos, registando-se muitas oscilações entre os valores de *especificidade* e *sensibilidade* para o mesmo teste. Os melhores resultados registados para estas redes foram conseguidos utilizando a função *trainscg* como função de treino.

3.1.3 Análise dos Resultados Obtidos para Classificação em Grupo

Após a análise dos resultados obtidos para a *Classificação Individual*, o cenário observado para a *Classificação em Grupo* não é muito diferente: De uma forma geral as redes mostraram o mesmo comportamento que nos testes anteriores, tendo-se registado algumas variações face ao observado anteriormente, que queremos destacar:

Em primeiro lugar, nos testes agora realizados as variações, para a mesma situação, de valores muito elevados de *especificidade* e muito reduzidos de *sensibilidade* (e vice-versa) não só estão presentes como são mais regulares e evidentes: Por exemplo, nas redes *Layer Recurrent*, *Distributed Time Delay* e *FeedForward Input Time Delay*, registámos várias situações com *especificidades* de 1, e *sensibilidades* de 0, e vice-versa.

Em segundo lugar, verificámos a existência de muito menos classificações inválidas, algo só igualado na *Classificação Individual* pela rede *Radial Basis Function*, que não realizou qualquer classificação inválida.

3.2 Redução da Dimensionalidade

3.2.1 Descrição

Com base nos resultados e análises realizadas anteriormente, concluímos que as redes capazes de realizar uma melhor classificação e identificação dos estados *ictais* são as seguintes:

- Rede *Radial Basis Function* com 3 e 5 neurónios

- Rede *FeedForward* com 3, 5 e 29 neurónios, utilizando as funções de treino *trainrp* e *trainscg*
- Rede *Layer Recurrent* com 3, 5 e 29 neurónios, utilizando as funções de treino *trainrp* e *trainscg*
- Rede *Distributed Time Delay*, com 3, 5 e 29 neurónios, utilizando a função de treino *trainscg*

Assim, nesta secção, pretendemos avaliar a prestação destas redes, quando treinadas com conjuntos de dados semelhantes aos utilizados, mas removendo algumas características mais redundantes.

Embora não sejam de esperar melhoras muito significativas na *especificidade* e *sensibilidade* das redes, ao remover características redundantes dos *data sets* esperamos reduzir significativamente o tempo de treino das redes (idealmente até valores onde já não fosse necessário recorrer a processamento gráfico como forma de acelerar o treino das redes).

3.2.2 Testes

Nos testes realizados, procedemos a reduções de dimensionalidade dos dados de treino e de teste, considerando apenas as 5 e 15 características com maior correlação com a classificação final.

Para determinarmos quais as características a considerar, recorremos à função *corrcoef* do *Matlab*, obtendo, para cada ficheiro utilizado, as correlações de cada característica com a classificação final esperada.

Uma vez obtidos estes valores, restou-nos proceder à sua ordenação, escolhendo por fim as características com maior valor de correlação, nas quantidades referidas.

Uma vez determinadas as características a considerar, determinámos os dados de treino e teste das redes (considerando apenas estas características), procedendo de seguida ao treino e teste das redes referidas anteriormente.

Os resultados dos testes realizados podem ser consultados no final do presente documento, na secção destinada aos anexos, após a apresentação dos resultados dos testes iniciais.

De uma forma geral, para a *Classificação Individual e em Grupo* não verificamos diferenças significativas, quando treinamos as redes com um menor número de características:

Na *Classificação Individual* continuamos a presenciar algumas variações nos valores de *sensibilidade* e *especificidade* para o mesmo teste, mantendo-se também a rede *Radial Basis Function* como a única rede a não realizar *classificações inválidas*.

Já na *Classificação em Grupo*, o número de testes onde se detetam *classificações inválidas* é bastante reduzido, sendo que quando estas são detetadas o seu número é bastante elevado. Para além disso, também se verificam algumas variações nos valores de *sensibilidade* e *especificidade* para o mesmo teste.

Não obstante, à luz do que esperávamos (e que também referimos anteriormente), constatámos que, ao considerarmos um número de características inferior, o tempo necessário para treinar as diferentes redes neuronais diminuiu consideravelmente, nomeadamente quando apenas considerámos as 5 características mais importantes.

4 Conclusões

Após uma análise crítica dos testes e respetivos resultados obtidos, existem alguns pontos aos quais pretendemos dar destaque.

Em primeiro lugar, em ambos os conjuntos de testes realizados, redes (e respetivas configurações) que apresentaram melhores resultados foram as seguintes:

- Rede *Radial Basis Function* com 3 e 5 neurónios
- Rede *FeedForward* com 3, 5 e 29 neurónios, utilizando as funções de treino *trainrp* e *trainscg*
- Rede *Layer Recurrent* com 3, 5 e 29 neurónios, utilizando as funções de treino *trainrp* e *trainscg*
- Rede *Distributed Time Delay*, com 3, 5 e 29 neurónios, utilizando a função de treino *trainscg*

Da mesma forma, dos dois ficheiros com os quais realizámos os testes, foi com os dados do ficheiro *44020.mat* que foram registados os melhores resultados, superando assim o ficheiro *63502.mat*.

Isto poderá ser devido ao facto de, o paciente cujos dados se encontram no ficheiro *44020.mat* possuir uma atividade cerebral mais favorável ao diagnóstico de situações *ictais*, recorrendo à abordagem por nós adotada, com os tipos de rede escolhidos. Embora consideremos que não dispomos dos conhecimentos médicos necessários para produzir esta afirmação com um grau de confiança bastante elevado, esta parece-nos ser uma justificação válida.

Relativamente às funções de treino estudadas, a função *trainscg* provou ser a melhor, uma vez que praticamente todas as redes nas quais esta foi utilizada obtiveram melhores resultados, quando comparados com as restantes, do mesmo tipo.

Ao diminuirmos as características com que procedíamos aos treinos e teste da rede os resultados que obtivemos confirmaram as nossas expetativas, uma vez que não verificámos variações significativas na *sensibilidade* e *especificidade* das redes testadas.

De facto, ao considerarmos apenas as características que têm uma maior contribuição para a saída desejada é expetável que a aprendizagem realizada pela rede não saia demasiado prejudicada. Tal situação só será contemplada se o número de características consideradas for demasiado reduzido, excluindo características com bastante influência na determinação no valor obtido à saída da rede neuronal.

Efetivamente, para o número de características consideradas verificámos que a aprendizagem não sofria penalizações significativas, mesmo considerando apenas as 5 características mais influentes para o resultado final.

Mais ainda, ao realizarmos o treino das redes com um menor número de características, tal como esperado, observamos que o tempo de treino das redes baixou consideravelmente. Com efeito, uma vez que o número de características

a considerar é menor, o número de passos a realizar em cada iteração do treino é menor, o que reduz o tempo de treino.

Mais ainda, procedendo à eliminação das características mais ambíguas, é de esperar que a rede apresente uma maior e mais rápida convergência, melhorando também a sua performance e o seu tempo de treino, o que foi por nós verificado.

5 Anexos

Nas páginas seguintes apresentamos resultados obtidos para todos os testes realizados.

Single Classification

Network	Number Neurons Network	Training Function	Performance Function	Training Goal	Activation Function	Input	Percentage Crysis (0-100)	Specificity	Sensibility	True Positives	True Negatives	False Positives	False Negatives	Invalid Data
Radial Basis Network	3	-	-	0.01	-	44202.mat	30	0.94193	0.88824	906	237550	14645	114	0
Radial Basis Network	5	-	-	0.01	-	44202.mat	30	0.94193	0.89314	911	237550	14645	109	0
Radial Basis Network	29	-	-	0.01	-	44202.mat	30	0.89547	0.94706	966	225830	26361	54	0
FeedForward	3	traingd	mse	1.00E-006	-	44202.mat	30	0.95198	0.85378	870	240070	12109	149	16
FeedForward	5	traingd	mse	1.00E-006	-	44202.mat	30	0.96111	0.85686	874	242380	9807	146	9
FeedForward	29	traingd	mse	1.00E-006	-	44202.mat	30	0.97473	0.83988	855	245700	6370	163	125
FeedForward	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99914	0.51875	498	251900	216	462	139
FeedForward	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.99977	0.42217	358	252090	57	490	217
FeedForward	29	trainrp	mse	1.00E-006	-	44202.mat	30	0.99998	0.54793	503	251910	5	415	382
FeedForward	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.99772	0.68431	698	251620	575	322	0
FeedForward	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.99676	0.73084	744	251370	816	274	6
FeedForward	29	trainscg	mse	1.00E-006	-	44202.mat	30	0.99687	0.72206	730	251330	788	281	86
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	44202.mat	30	0.95511	0.85083	867	240760	11315	152	116
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	44202.mat	30	0.93698	0.8845	896	234860	15797	117	1540
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	44202.mat	30	0.9728	0.84608	863	245180	6855	157	157
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99994	0.41071	322	251880	15	462	529
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.99986	0.39205	296	252150	35	459	272
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	44202.mat	30	0.99998	0.5406	486	251940	5	413	372
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.99765	0.70784	722	251600	592	298	0
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.99561	0.72718	741	251070	1106	278	21
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	44202.mat	30	0.9955	0.7399	751	250840	1135	264	218
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	1020	0	252190	0	0
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	36	0	9	0	253170
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	30	0.98112	0.68039	694	247420	4762	326	16
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99385	0.67615	689	250630	1550	330	12
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99881	0.59762	603	251870	299	406	33
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99422	0.67158	683	250660	1458	334	82
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	30	0.94317	0.86176	879	237840	14332	141	22
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	30	0.95514	0.86471	882	240740	11307	138	148
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	30	0.96929	0.85588	873	244400	7744	147	53
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	30	0.96269	0.86261	879	242140	9385	140	667
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	30	0.95822	0.86982	882	239380	10438	132	2385
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	30	0.96338	0.8598	877	242920	9234	143	40
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	30	0	0	0	0	8	1	253200
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	30	NaN	1	11	0	0	0	253200
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	30	0.99809	0.44706	304	250380	478	376	1675
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99996	0.39394	325	252140	11	500	233
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99907	0.51813	500	251770	235	465	241
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99997	0.53799	439	251620	7	377	766
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	30	0.99943	0.30317	201	10562	6	462	241980
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	30	0.99952	0.55623	549	252030	122	438	75
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	30	0.52055	1	180	38	35	0	252960
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99893	0.58614	592	251910	269	418	24
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99999	0.46778	363	252160	3	413	273
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99996	0.57051	534	252040	10	402	232
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0.99897	0.5451	556	251930	261	464	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0.99945	0.20588	210	252060	138	810	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0.72802	0.7527	767	183600	68589	252	7
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99614	0.63645	646	251210	974	369	18
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99551	0.6297	636	251010	1133	374	58
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99557	0.64653	642	250380	1115	351	730
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99824	0.72397	737	251700	444	281	48

Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99816	0.72647	741	251690	464	279	37
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99718	0.74238	755	251410	711	262	74
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99696	0.69087	704	251420	767	315	9
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99614	0.7419	756	251170	974	263	47
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99692	0.73294	741	251260	776	270	171
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	1020	0	252190	0	0
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	1020	0	252190	0	1
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	1020	0	252190	0	0
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99335	0.68922	703	250510	1677	317	2
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99345	0.68235	696	250520	1652	324	20
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99314	0.68302	696	250450	1730	323	18
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	30	0.94188	0.86922	884	236540	14597	133	1063
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	30	0.9563	0.86275	880	241110	11018	140	64
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	30	0.97929	0.84283	858	246890	5222	160	80
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	30	0.96274	0.86176	879	242120	9371	141	697
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	30	0.94861	0.86654	883	239200	12958	136	41
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	30	0.94982	0.87328	889	238370	12594	129	1231
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	30	0	1	1020	0	252190	0	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	30	1	0	0	252190	0	1020	1
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	30	1	NaN	0	1	0	0	253210
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99968	0.57171	582	252100	80	436	16
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99958	0.58457	591	252040	106	420	51
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99927	0.60555	611	251950	185	398	65
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	30	0	1	1010	0	252180	0	19
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	30	0.99995	0.43522	430	252170	12	558	44
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	30	0	1	811	0	1130	0	251270
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	30	0	1	1020	0	252190	0	7
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99938	0.62554	583	251860	155	349	266
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99982	0.5598	571	252140	45	449	5
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0	1	1020	0	252190	0	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	30	1	0	0	252190	0	1020	1
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0	1	1020	0	252190	0	1
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99288	0.6624	673	250280	1796	343	118
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99611	0.62832	639	251200	981	378	17
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99607	0.63556	647	251190	990	371	16
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99622	0.71807	731	251210	952	287	29
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99675	0.70392	718	251330	820	302	45
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99753	0.73111	745	251550	623	274	19
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99499	0.69676	710	250880	1264	309	52
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99792	0.71148	725	251620	525	294	51
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99674	0.71499	725	251330	823	289	46
Radial Basis Network	3	-	-	0.01	-	44202.mat	50	0.87707	0.8789	1379	475900	66704	190	0
Radial Basis Network	5	-	-	0.01	-	44202.mat	50	0.87156	0.87954	1380	472910	69691	189	0
Radial Basis Network	29	-	-	0.01	-	44202.mat	50	0.8097	0.92352	1449	439350	103260	120	0
FeedForward	3	traingd	mse	1.00E-006	-	44202.mat	50	0.76955	0.80242	1259	417190	124930	310	488
FeedForward	5	traingd	mse	1.00E-006	-	44202.mat	50	0.73427	0.78458	1231	398380	144170	338	51
FeedForward	29	traingd	mse	1.00E-006	-	44202.mat	50	0.85513	0.78736	1233	463680	78553	333	373
FeedForward	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99216	0.48707	358	386040	3052	377	154350
FeedForward	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.99384	0.48638	625	535720	3320	660	3843
FeedForward	29	trainrp	mse	1.00E-006	-	44202.mat	50	0.99076	0.62352	896	536490	5002	541	1239
FeedForward	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.96158	0.75462	1184	521710	20844	385	52
FeedForward	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.95471	0.74298	1165	517980	24570	403	56
FeedForward	29	trainscg	mse	1.00E-006	-	44202.mat	50	0.94217	0.73529	1100	510080	31308	396	1286

Layer Recurrent Network	3	traingd	mse	1.00E-006	-	44202.mat	50	0.82324	0.79795	1248	444620	95465	316	2519
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	44202.mat	50	0.72391	0.78266	1228	392180	149570	341	849
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	44202.mat	50	0.8603	0.75783	1186	466340	75725	379	544
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.9968	0.46944	722	540610	1737	816	286
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.98867	0.44917	433	513760	5889	531	23557
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	44202.mat	50	0.99253	0.61208	912	536790	4042	578	1850
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.91632	0.80115	1257	497170	45402	312	31
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.95957	0.76148	1194	520600	21932	374	68
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	44202.mat	50	0.94428	0.77991	1219	511770	30200	344	641
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	50	0.98478	0.3276	514	534340	8261	1055	4
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	50	0.99452	0.52934	830	539590	2975	738	41
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	50	0.98904	0.45252	710	536620	5949	859	29
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	50	0.99024	0.63892	998	537050	5293	564	270
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	50	0.99108	0.63771	991	536930	4833	563	849
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	50	0.98734	0.64199	1006	535640	6866	561	95
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	50	0.68754	0.80051	1256	372950	169490	313	157
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	50	0.76235	0.80115	1257	412160	128480	312	1962
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	50	0.86451	0.81749	1281	467990	73349	286	1261
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	50	0.71801	0.79911	1253	389070	152800	315	737
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	50	0.82793	0.82642	1295	447220	92944	272	2444
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	50	0.84607	0.81801	1281	457320	83200	285	2082
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	50	0.00007372	0.98406	1543	40	542560	25	6
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	542120	0	1255	799
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	50	0.99951	0.3283	457	541580	265	935	934
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99684	0.58604	865	535470	1699	611	5524
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99828	0.44417	533	539740	932	667	2301
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99496	0.54428	676	535690	2714	566	4523
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.0058596	0.81637	1147	3167	537310	258	2287
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.99824	0.25957	305	539390	953	870	2653
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.9915	0.54807	667	535960	4596	550	2393
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	50	3.6873E-006	1	1509	2	542400	0	261
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.99978	0.081006	58	526360	115	658	16976
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.98987	0.62575	943	535660	5480	564	1528
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.99953	0.021033	33	542350	255	1536	1
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.99949	0.08413	132	542320	277	1437	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.98925	0.52263	820	536750	5833	749	15
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.98867	0.63596	994	536020	6141	569	450
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.98796	0.64244	999	535620	6527	556	468
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99056	0.63931	927	534730	5098	523	2891
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.95216	0.76835	1204	516130	25930	363	543
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.94663	0.78594	1230	512520	28896	335	1185
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.93795	0.7886	1231	507210	33552	330	1844
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.94665	0.77856	1220	513440	28936	347	231
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.9512	0.7743	1211	514810	26414	353	1378
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.93537	0.7918	1236	506120	34973	325	1521
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	542600	0	1569	1
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	50	0	1	1569	0	542600	0	1
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	50	9.2149E-006	0.99936	1568	5	542600	1	1
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	50	0.98843	0.6388	1001	536270	6277	566	52
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	50	0.98588	0.64615	1008	534530	7654	552	422
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	50	0.9847	0.64634	1007	533820	8293	551	499
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	50	0.76613	0.83673	1312	415500	126830	256	273
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	50	0.69151	0.80433	1262	375060	167320	307	224

FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	50	0.84887	0.81022	1268	458760	81678	297	2168
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	50	0.70143	0.82526	1294	380460	161940	274	199
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	50	0.80199	0.81314	1275	434360	107240	293	1000
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	50	0.85393	0.81302	1274	461090	78873	293	2644
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	50	0	1	1568	0	542600	0	7
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	50	0	1	1	0	6	0	544160
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	50	0.99999	0.00063735	1	542590	7	1568	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99513	0.60335	937	539480	2642	616	499
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99428	0.61282	956	539060	3102	604	447
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99162	0.63542	983	537070	4538	564	1011
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.99501	0.74261	955	517010	2593	331	23278
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.99709	0.75064	876	495980	1446	291	45577
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	50	0	1	1066	0	6797	0	536310
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.99517	0.62017	947	538900	2615	580	1127
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.99953	0.5867	538	523360	244	379	19648
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.99659	0.58854	914	540150	1849	639	617
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.000012901	0.99936	1568	7	542590	1	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	542600	0	1569	2
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	6	0	1	544160
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.98584	0.65237	1019	534700	7681	543	231
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.98665	0.64875	1014	534900	7237	549	469
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.98547	0.64387	998	534280	7880	552	465
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.93853	0.78799	1234	508840	33328	332	436
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.9562	0.77046	1205	517920	23722	359	963
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.94379	0.78526	1225	511070	30440	335	1103
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.96559	0.74646	1160	522440	18620	394	1556
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.96361	0.75622	1185	522290	19723	382	591
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.93715	0.79145	1241	507730	34050	327	818
Radial Basis Network	3	-	-	0.01	-	44202.mat	70	0.87692	0.86339	1776	502580	70539	281	0
Radial Basis Network	5	-	-	0.01	-	44202.mat	70	0.87107	0.86339	1776	499230	73893	281	0
Radial Basis Network	29	-	-	0.01	-	44202.mat	70	0.81372	0.91492	1882	466360	106760	175	0
FeedForward	3	traingd	mse	1.00E-006	-	44202.mat	70	0.77137	0.81274	1671	441680	130920	385	524
FeedForward	5	traingd	mse	1.00E-006	-	44202.mat	70	0.73627	0.80165	1649	421930	151140	408	52
FeedForward	29	traingd	mse	1.00E-006	-	44202.mat	70	0.85608	0.79698	1637	490310	82425	417	393
FeedForward	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99224	0.51266	506	406520	3178	481	164490
FeedForward	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99392	0.49385	843	565990	3461	864	4025
FeedForward	29	trainrp	mse	1.00E-006	-	44202.mat	70	0.99093	0.62716	1196	566790	5190	711	1291
FeedForward	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.96169	0.7545	1552	551110	21956	505	55
FeedForward	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.9547	0.74805	1538	547100	25959	518	63
FeedForward	29	trainscg	mse	1.00E-006	-	44202.mat	70	0.94225	0.74811	1482	538830	33025	499	1344
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	44202.mat	70	0.82412	0.80839	1658	470090	100320	393	2713
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	44202.mat	70	0.72568	0.80117	1648	415260	156970	409	895
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	44202.mat	70	0.86094	0.7735	1588	492930	79615	465	583
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99683	0.45982	927	571040	1816	1089	304
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.98879	0.46646	605	542410	6150	692	25323
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	44202.mat	70	0.99262	0.61264	1202	567080	4218	760	1920
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.91619	0.80117	1648	525060	48029	409	33
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.95971	0.76216	1567	549960	23088	489	74
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	44202.mat	70	0.94429	0.78146	1602	540550	31888	448	690
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	70	0.98427	0.31356	645	564100	9015	1412	6
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	70	0.99453	0.53064	1091	569940	3137	965	44
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	70	0.98914	0.45892	944	566870	6222	1113	32
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	70	0.99041	0.64063	1312	567350	5496	736	281

Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	70	0.99124	0.64029	1303	567250	5015	732	881
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	70	0.98754	0.64296	1320	565880	7142	733	99
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	70	0.68914	0.81818	1683	394850	178110	374	160
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	70	0.76389	0.81274	1671	436210	134830	385	2082
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	70	0.86519	0.81938	1683	494720	77084	371	1318
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	70	0.72026	0.8142	1674	412240	160110	382	770
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	70	0.82846	0.82871	1703	472690	97873	352	2564
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	70	0.84688	0.82132	1687	483530	87427	367	2172
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	70	0.000078518	0.98784	2031	45	573070	25	8
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	572610	0	1663	902
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	70	0.9995	0.31318	575	572050	284	1261	1011
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99686	0.58717	1135	565500	1780	798	5967
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99827	0.44144	701	570140	989	887	2464
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99502	0.53479	884	565930	2832	769	4766
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.0057697	0.80196	1470	3294	567620	363	2433
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.99825	0.29693	465	569750	997	1101	2865
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.99164	0.5628	941	566230	4772	731	2504
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	70	3.4909E-006	1	1991	2	572920	0	268
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.99979	0.097895	93	555900	116	857	18213
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.99	0.62582	1241	565880	5714	742	1606
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.99954	0.019932	41	572860	262	2016	2
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.99948	0.082645	170	572820	299	1887	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.98838	0.5124	1054	566450	6657	1003	15
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.98884	0.63912	1307	566270	6390	738	477
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.98815	0.64587	1315	565860	6785	721	499
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99071	0.6408	1222	564920	5296	685	3056
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.95223	0.76934	1581	545190	27353	474	585
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.94671	0.78606	1613	541370	30475	439	1283
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.93794	0.78965	1618	535720	35444	431	1970
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.94668	0.78151	1606	542330	30545	449	252
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.95127	0.77561	1590	543810	27858	460	1456
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.93537	0.79277	1622	534590	36940	424	1606
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	573120	0	2057	1
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	70	0	1	2057	0	573120	0	1
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	70	0.000015704	0.99951	2056	9	573110	1	1
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	70	0.98862	0.64167	1318	566550	6519	736	57
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	70	0.98604	0.65005	1330	564680	7993	716	458
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	70	0.98484	0.64922	1327	563920	8681	717	533
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	70	0.76647	0.83998	1727	439050	133770	329	308
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	70	0.69305	0.81964	1686	397040	175850	371	235
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	70	0.84965	0.81393	1671	485030	85830	382	2270
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	70	0.70411	0.83414	1715	403390	169520	341	212
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	70	0.80339	0.82004	1686	459600	112480	370	1045
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	70	0.85469	0.81655	1678	487460	82874	377	2793
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	70	0	1	2056	0	573110	0	11
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	70	0	1	1	0	10	0	575170
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	70	0.99998	0.00048614	1	573110	11	2056	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99518	0.60039	1223	569860	2761	814	518
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99435	0.61117	1248	569440	3236	794	464
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99174	0.63717	1289	567380	4725	734	1048
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.99506	0.73843	1245	546220	2713	441	24561
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.99709	0.7474	1148	523730	1527	388	48383
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	70	0	1	1394	0	7052	0	566730

FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.99522	0.61993	1238	569270	2734	759	1176
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.99951	0.5834	703	552950	270	502	20751
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.9966	0.58673	1194	570560	1948	841	638
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.000019193	0.99951	2056	11	573110	1	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	573120	0	2057	2
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	10	0	1	575170
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.986	0.6561	1345	564860	8023	705	242
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.98683	0.65334	1340	565080	7542	711	503
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.98556	0.64764	1316	564370	8269	716	509
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.93848	0.78958	1621	537430	35229	432	465
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.95635	0.77122	1581	547140	24975	469	1017
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.94385	0.78554	1608	539850	32117	439	1169
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.96575	0.74841	1526	551920	19574	513	1649
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.96373	0.7562	1554	551750	20762	501	616
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.93706	0.79319	1630	536230	36017	425	876
Radial Basis Network	3	-	-	0.01	-	63502.mat	30	0.93157	0.67449	1092	153600	11283	527	0
Radial Basis Network	5	-	-	0.01	-	63502.mat	30	0.91729	0.71587	1159	151250	13637	460	0
Radial Basis Network	29	-	-	0.01	-	63502.mat	30	0.80161	0.75479	1222	132170	32712	397	0
FeedForward	3	traingd	mse	1.00E-006	-	63502.mat	30	0.80417	0.6972	1119	131220	31955	486	1725
FeedForward	5	traingd	mse	1.00E-006	-	63502.mat	30	0.94104	0.66395	1059	153040	9589	536	2281
FeedForward	29	traingd	mse	1.00E-006	-	63502.mat	30	0.94187	0.66646	1067	154860	9558	534	484
FeedForward	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.98319	0.46497	657	149920	2563	756	12614
FeedForward	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.99308	0.49921	632	153180	1067	634	10991
FeedForward	29	trainrp	mse	1.00E-006	-	63502.mat	30	0.98731	0.52303	704	159750	2053	642	3361
FeedForward	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.97216	0.62555	1004	159030	4555	601	1313
FeedForward	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.97932	0.60079	915	161370	3408	608	206
FeedForward	29	trainscg	mse	1.00E-006	-	63502.mat	30	0.96968	0.57485	887	158090	4943	656	1926
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	63502.mat	30	0.96553	0.6518	1052	159050	5678	562	160
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	63502.mat	30	0.97964	0.61955	995	161080	3348	611	468
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	63502.mat	30	0.97553	0.5701	858	160020	4013	647	972
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.99977	0.016	6	39266	9	369	126860
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.99341	0.37527	343	153830	1020	571	10745
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	63502.mat	30	0.98549	0.55663	860	159780	2352	685	2826
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.9761	0.57947	937	160930	3941	680	13
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.9825	0.60842	968	161420	2875	623	615
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	63502.mat	30	0.97164	0.56075	863	159400	4652	676	918
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	30	0	1	1567	0	164860	0	81
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	30	0.97006	0.50309	814	159910	4935	804	39
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	30	0.94932	0.41313	623	155590	8307	885	1101
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	30	0.94497	0.58936	953	155760	9070	664	59
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	30	0.95054	0.59071	954	156560	8147	661	186
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	30	0.97701	0.59975	950	158880	3738	634	2299
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	30	0.77261	0.74442	1200	125910	37058	412	1922
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	30	0.89539	0.66522	1075	147590	17244	541	55
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	30	0.89905	0.71375	1137	146490	16449	456	1970
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	30	0.95112	0.66893	1083	156730	8055	536	103
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	30	0.94897	0.67846	1093	156220	8400	518	271
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	30	0.91309	0.69164	1108	149690	14248	494	969
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	30	NaN	NaN	0	0	0	0	166510
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	30	0.99987	0	0	164290	22	1578	613
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	30	0.6279	0.33488	72	1274	755	143	164260
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.9922	0.48952	607	160320	1260	633	3687
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.94569	0.55611	778	144920	8322	621	11867

Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.98661	0.5665	805	156010	2118	616	6954
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	30	0.9927	0.47794	650	160340	1179	710	3623
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	30	1	0	0	1911	0	300	164290
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	30	0.94299	0.56899	866	153790	9297	656	1898
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.97903	0.56207	892	159540	3417	695	1965
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.97333	0.58333	910	159590	4373	650	985
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.98389	0.54564	801	158220	2590	667	4227
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0	1	1	0	460	0	166040
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.0024444	0.9697	1568	403	164470	49	19
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.91408	0.53846	721	149380	14040	618	1751
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.97315	0.57196	926	160420	4427	693	36
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.98058	0.59379	937	158900	3147	641	2885
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.98459	0.57123	838	157520	2465	629	5054
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.97712	0.62485	1011	161110	3772	607	4
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.97608	0.50155	807	160840	3941	802	111
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.97651	0.53475	754	159320	3833	656	1939
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.97652	0.61248	991	161000	3872	627	12
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.98059	0.59478	957	161550	3198	652	151
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.95833	0.6363	943	156610	6809	539	1602
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	30	0.0024994	0.99876	1612	412	164430	2	52
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	31	0	3	166470
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	30	0.97585	0.6	3	202	5	2	166290
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	30	0.97021	0.57882	929	159330	4893	676	674
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	30	0.98134	0.58505	939	161430	3070	666	399
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	30	0.96919	0.59513	954	158180	5029	649	1697
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	30	0.95962	0.6714	1087	158210	6657	532	22
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	30	0.96376	0.65139	1052	158610	5964	563	316
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	30	0.92785	0.64988	1045	152390	11850	563	653
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	30	0.7601	0.70545	1140	124780	39384	476	722
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	30	0.83522	0.68128	1088	137290	27086	509	533
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	30	0.95542	0.62108	990	156780	7316	604	813
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	76	0	5	166420
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	30	0.99916	0.0018587	3	164470	138	1611	288
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	30	0.00049769	0.99627	1603	82	164680	6	135
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.96856	0.58524	944	158790	5155	669	950
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.97349	0.57391	924	159630	4347	686	921
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.96914	0.58089	930	158770	5056	671	1083
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	30	0.99977	0	0	164360	37	1525	581
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	30	0	1	1619	0	164890	0	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	30	0	1	1119	0	15230	0	150160
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.0022352	0.99241	1568	368	164270	12	289
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	30	0	1	1616	0	164850	0	35
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.038406	0.99907	1074	506	12669	1	152260
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	383	0	1	166120
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0	1	5	0	400	0	166100
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.43529	0.125	1	37	48	7	166410
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.96126	0.61524	993	158030	6369	621	493
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.97644	0.58048	934	160580	3875	675	441
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.97503	0.59045	940	159360	4082	652	1469
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.97858	0.43562	680	160120	3505	881	1315
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.97997	0.58142	939	161430	3299	676	161
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.98199	0.59252	951	161510	2962	654	424
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.9756	0.62075	1005	160860	4023	614	8

FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.96958	0.61053	986	159590	5007	629	290
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.97646	0.56591	893	159890	3855	685	1184
Radial Basis Network	3	-	-	0.01	-	63502.mat	50	0.91551	0.67216	734	104010	9599	358	0
Radial Basis Network	5	-	-	0.01	-	63502.mat	50	0.91547	0.67216	734	104010	9604	358	0
Radial Basis Network	29	-	-	0.01	-	63502.mat	50	0.90873	0.71154	777	103240	10369	315	0
FeedForward	3	traingd	mse	1.00E-006	-	63502.mat	50	0.91189	0.70879	774	103220	9974	318	416
FeedForward	5	traingd	mse	1.00E-006	-	63502.mat	50	0.9121	0.67919	741	103450	9970	350	190
FeedForward	29	traingd	mse	1.00E-006	-	63502.mat	50	0.94468	0.65074	708	106880	6259	380	476
FeedForward	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.94243	0.10502	113	105400	6438	963	1791
FeedForward	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.17536	0.96976	481	447	2102	15	111660
FeedForward	29	trainrp	mse	1.00E-006	-	63502.mat	50	0.97123	0.47411	467	106290	3148	518	4283
FeedForward	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.95578	0.59303	647	108560	5023	444	29
FeedForward	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.96136	0.62546	683	109210	4389	409	13
FeedForward	29	trainscg	mse	1.00E-006	-	63502.mat	50	0.95968	0.57618	624	108230	4547	459	844
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	63502.mat	50	0.9122	0.69231	756	103640	9975	336	0
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	63502.mat	50	0.91525	0.69203	755	103540	9588	336	484
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	63502.mat	50	0.92691	0.65533	713	105090	8287	375	235
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.99727	0.12133	91	110560	303	659	3092
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.97452	0.485	485	108020	2824	515	2862
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	63502.mat	50	0.96848	0.49755	508	107430	3496	513	2761
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.96415	0.57509	628	109480	4071	464	66
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.94226	0.59945	654	106920	6552	437	138
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	63502.mat	50	0.95236	0.61892	674	107860	5396	415	357
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.000052907	1	1091	6	113400	0	207
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.00033482	1	1091	38	113460	0	119
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.97479	0.37248	406	110410	2855	684	352
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	50	0.96888	0.54679	596	109990	3533	494	89
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	50	0.97142	0.54002	587	110230	3243	500	147
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	50	0.97055	0.54529	590	109850	3333	492	443
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	50	0.88578	0.70394	768	100530	12963	323	117
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	50	0.91272	0.70404	766	103490	9896	322	235
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	50	0.91832	0.69294	756	104120	9260	335	237
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	50	0.88408	0.70009	761	100010	13114	326	491
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	50	0.92546	0.68378	746	104940	8452	345	224
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	50	0.9413	0.66636	727	106230	6625	364	754
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.98672	0.022326	24	112030	1508	1051	87
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0	1	2	0	438	0	114260
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.96212	0.013889	1	1473	58	71	113100
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.97555	0.51141	538	109560	2746	514	1345
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.98574	0.4365	409	107380	1553	528	4835
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.97176	0.49564	455	106820	3104	463	3863
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	50	0	1	604	0	5592	0	108510
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.030769	0.9883	338	146	4599	4	109620
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.96858	0.38634	379	108010	3504	602	2207
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.2334	0.21212	7	246	808	26	113620
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.99182	0.3087	213	105130	867	477	8022
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.97028	0.5571	600	108680	3329	477	1623
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.68085	NaN	0	32	15	0	114660
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.97057	0.22802	249	110270	3344	843	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.96635	0.28253	304	109400	3809	772	417
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.97721	0.54657	581	109690	2558	482	1389
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.97331	0.55079	591	109530	3003	482	1103
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.97693	0.54468	579	109760	2592	484	1290

Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.93491	0.60714	663	105680	7358	429	571
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.94853	0.60165	657	107610	5840	435	158
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.95689	0.60148	652	108350	4881	432	394
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.93331	0.60897	665	106030	7577	427	5
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.94411	0.59615	651	107130	6342	441	142
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.95369	0.60294	656	107630	5226	432	763
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	50	1	0	0	113600	0	1092	16
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.00041421	1	1091	47	113420	0	145
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.0003438	1	1091	39	113400	0	176
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	50	0.96142	0.54212	592	109210	4382	500	16
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	50	0.96427	0.54178	577	109200	4047	488	388
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	50	0.96917	0.55607	605	109950	3497	483	172
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	50	0.88688	0.70669	771	100690	12843	320	77
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	50	0.90063	0.71009	774	102180	11274	316	164
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	50	0.9223	0.68969	749	104500	8804	337	310
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	50	0.87958	0.71402	779	99647	13642	312	324
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	50	0.90287	0.6978	762	102320	11007	330	286
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	50	0.90792	0.68836	751	102780	10424	340	409
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.99854	0.00091575	1	113430	166	1091	17
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.78947	NaN	0	15	4	0	114690
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0	1	1091	0	113430	0	180
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.98954	0.33052	274	109610	1159	555	3106
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.96623	0.51386	556	109620	3831	526	168
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.96851	0.53704	580	109350	3555	500	723
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	50	0	1	764	0	109990	0	3946
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.99988	0	0	111000	13	865	2824
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.0728	0.99845	646	527	6712	1	106820
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.98332	0.12762	134	111480	1891	916	280
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.99981	0	0	113430	22	1089	168
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.97163	0.32768	348	110020	3212	714	415
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.99828	0.00091575	1	113420	195	1091	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	50	1	0	0	175	0	1	114530
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.99864	0.00091575	1	113420	155	1091	38
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.9719	0.55147	600	109870	3177	488	568
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.9758	0.55198	600	110770	2747	487	100
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.97129	0.54729	596	110200	3258	493	155
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.92997	0.6055	660	105620	7954	430	39
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.96507	0.5864	638	109500	3963	450	151
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.93422	0.62018	676	105940	7460	414	214
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.95318	0.58791	642	108240	5317	450	53
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.96505	0.44092	459	108410	3926	582	1323
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.93197	0.61397	668	105630	7710	420	280
Radial Basis Network	3	-	-	0.01	-	63502.mat	70	0.87158	0.56122	440	38314	5645	344	0
Radial Basis Network	5	-	-	0.01	-	63502.mat	70	0.86101	0.61735	484	37849	6110	300	0
Radial Basis Network	29	-	-	0.01	-	63502.mat	70	0.86767	0.64286	504	38142	5817	280	0
FeedForward	3	traingd	mse	1.00E-006	-	63502.mat	70	0.9007	0.53009	414	39447	4349	367	166
FeedForward	5	traingd	mse	1.00E-006	-	63502.mat	70	0.91453	0.56122	440	40188	3756	344	15
FeedForward	29	traingd	mse	1.00E-006	-	63502.mat	70	0.92257	0.53521	418	40378	3389	363	195
FeedForward	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.98856	0.28142	206	42939	497	526	575
FeedForward	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.97941	0.12955	96	41999	883	645	1120
FeedForward	29	trainrp	mse	1.00E-006	-	63502.mat	70	0.97781	0.22674	156	41825	949	532	1281
FeedForward	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.94807	0.41964	329	41665	2282	455	12
FeedForward	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.96388	0.44015	342	42107	1578	435	281

Single Classification

FeedForward	29	trainscg	mse	1.00E-006	-	63502.mat	70	0.94626	0.47382	371	41329	2347	412	284
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	63502.mat	70	0.86668	0.60332	473	38070	5856	311	33
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	63502.mat	70	0.87515	0.58876	461	38348	5471	322	141
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	63502.mat	70	0.94908	0.47066	369	41617	2233	415	109
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	63502.mat	70	1	0	0	43275	0	686	782
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.99826	0.016014	9	41251	72	553	2858
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	63502.mat	70	0.97818	0.26381	191	42138	940	533	941
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.93256	0.43718	341	40989	2964	439	10
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.94812	0.43295	339	41598	2276	444	86
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	63502.mat	70	0.95529	0.45967	359	41708	1952	422	302
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	70	0.98137	0.034439	27	43140	819	757	0
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	70	0.00004551	1	784	2	43944	0	13
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	70	0.9713	0.29449	230	42611	1259	551	92
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	70	0.96747	0.40434	317	42527	1430	467	2
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	70	0.96573	0.41956	326	42406	1505	451	55
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	70	0.96759	0.40154	312	42425	1421	465	120
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	70	0.8729	0.60077	471	38342	5583	313	34
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	70	0.90192	0.57015	447	39645	4311	337	3
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	70	0.90406	0.53699	421	39680	4211	363	68
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	70	0.86954	0.59821	469	38197	5731	315	31
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	70	0.89616	0.56888	446	39379	4563	338	17
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	70	0.90787	0.52679	413	39809	4040	371	110
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	70	0.016393	NaN	0	1	60	0	44682
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43879	0	783	81
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	70	0.12568	1	3	23	160	0	44557
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.95321	0.12483	90	40971	2011	631	1040
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.9952	0.18704	101	40410	195	439	3598
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.98043	0.25036	176	42382	846	527	812
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	70	0.00036447	0.99343	756	16	43883	5	83
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	70	0.99891	0.0051414	4	43864	48	774	53
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	70	0.9845	0.099042	62	41672	656	564	1789
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.97207	0.27967	205	42185	1212	528	613
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.96049	0.3534	270	41842	1721	494	416
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.95969	0.34404	257	41852	1758	490	386
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0	1	784	0	43959	0	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.99936	0.002551	2	43913	28	782	18
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.9841	0.1199	94	43209	698	690	52
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.96702	0.40903	317	42309	1443	458	216
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.9665	0.38613	295	42291	1466	469	222
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.97165	0.39446	299	42297	1234	459	454
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	70	1	0	0	43959	0	784	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.93703	0.44929	350	41088	2761	429	115
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.95474	0.45839	358	41743	1979	423	240
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.92735	0.40306	316	40760	3193	468	6
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.91875	0.46341	361	40298	3564	418	102
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.9445	0.48531	380	41407	2433	403	120
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	70	0	1	784	0	43958	0	1
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	70	0.000068281	1	784	3	43933	0	23
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	70	0.99977	0	0	43927	10	784	22
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	70	0.97201	0.39063	300	42617	1227	468	131
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	70	0.96031	0.42228	326	42122	1741	446	108
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	70	0.96536	0.39586	306	42307	1518	467	145
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	70	0.85902	0.60332	473	37761	6197	311	1

FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	70	0.88683	0.58291	457	38976	4974	327	9
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	70	0.91237	0.5645	442	40035	3845	341	80
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	70	0.86323	0.59311	465	37902	6005	319	52
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	70	0.87174	0.59694	468	38292	5634	316	33
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	70	0.9024	0.58036	455	39554	4278	329	127
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	70	0	1	784	0	43933	0	26
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43929	0	784	30
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	70	0.99986	0	0	43927	6	784	26
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.96586	0.30218	236	42355	1497	545	110
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.97616	0.24332	182	42551	1039	566	405
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.96784	0.323	250	42465	1411	524	93
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	70	0.99511	0.082251	57	42966	211	636	873
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	70	0	NaN	0	0	1	0	44742
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	70	0.94621	0.42292	310	39773	2261	423	1976
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.071429	1	1	3	39	0	44700
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.9597	0.28954	227	42149	1770	557	40
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.0002276	1	784	10	43926	0	23
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.99993	0	0	43945	3	784	11
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.9998	0	0	43924	9	784	26
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.00013659	1	784	6	43920	0	33
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.96827	0.37629	292	42478	1392	484	97
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.96556	0.39487	308	42413	1513	472	37
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.96449	0.40337	311	42339	1559	460	74
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.92554	0.43878	344	40671	3272	440	16
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.94457	0.42857	336	41457	2433	448	69
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.94641	0.44955	352	41533	2352	431	75
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.94955	0.42656	334	41730	2217	449	13
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.94894	0.43423	340	41700	2244	443	16
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.95065	0.46213	360	41628	2161	419	175

Group Classification

Network	Number Neurons Network	Training Function	Performance Function	Training Goal	Activation Function	Input	Percentage Crysis (0-100)	Specificity	Sensibility	True Positives	True Negatives	False Positives	False Negatives	Invalid Data
Radial Basis Network	3	-	-	0.01	-	44202.mat	30	0.97411	0.89052	911	245650	6528	112	0
Radial Basis Network	5	-	-	0.01	-	44202.mat	30	0.97209	0.8915	912	245140	7038	111	0
Radial Basis Network	29	-	-	0.01	-	44202.mat	30	0.94392	0.9609	983	238040	14141	40	0
FeedForward	3	traingd	mse	1.00E-006	-	44202.mat	30	0.9737	0.86804	888	245550	6632	135	0
FeedForward	5	traingd	mse	1.00E-006	-	44202.mat	30	0.978	0.86999	890	246630	5547	133	0
FeedForward	29	traingd	mse	1.00E-006	-	44202.mat	30	0.98626	0.85435	874	248720	3465	149	0
FeedForward	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99994	0.53177	544	252160	15	479	0
FeedForward	5	trainrp	mse	1.00E-006	-	44202.mat	30	1	0.39562	379	252180	0	579	65
FeedForward	29	trainrp	mse	1.00E-006	-	44202.mat	30	0.99999	0.53177	544	252180	3	479	0
FeedForward	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.99967	0.69599	712	252100	84	311	0
FeedForward	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.99956	0.74878	766	252070	112	257	0
FeedForward	29	trainscg	mse	1.00E-006	-	44202.mat	30	0.99967	0.74682	764	252100	82	259	0
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	44202.mat	30	0.97523	0.8651	885	245930	6246	138	0
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	44202.mat	30	0.96994	0.88172	902	244600	7580	121	0
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	44202.mat	30	0.98512	0.86119	881	248430	3753	142	0
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99999	0.3563	362	252180	3	654	7
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.99999	0.326	326	252180	2	674	23
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	44202.mat	30	0.99998	0.50783	519	252180	4	503	1
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.99966	0.71848	735	252090	87	288	0
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.9995	0.73998	757	252050	127	266	0
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	44202.mat	30	0.99932	0.75464	772	252010	172	251	0
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	1023	0	252180	0	0
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	30	1	0.2844	31	83	0	78	253010
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	30	0.99159	0.68426	700	250060	2122	323	0
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99911	0.68915	705	251960	224	318	0
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99987	0.60508	619	252150	34	404	0
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99929	0.68035	696	252000	179	327	0
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	30	0.96892	0.8739	894	244340	7837	129	0
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	30	0.9748	0.87195	892	245820	6356	131	0
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	30	0.98317	0.86315	883	247940	4244	140	0
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	30	0.97898	0.86999	890	246880	5302	133	0
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	30	0.97733	0.87195	892	246460	5716	131	0
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	30	0.97954	0.86901	889	247020	5160	134	0
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	30	1	0	0	80	0	10	253110
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	30	NaN	0	0	0	0	75	253130
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	30	0.99984	0.33822	323	252140	40	632	68
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	30	1	0.34874	347	252180	0	648	28
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.9999	0.51711	529	252160	24	494	0
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99999	0.46523	475	252180	3	546	2
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	30	1	0.24885	217	52080	0	655	200250
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	30	0.99996	0.5523	565	252170	9	458	0
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	30	1	0.26816	144	579	0	393	252090
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99985	0.59629	610	252140	37	413	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99999	0.41195	386	252180	3	551	86
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99999	0.53666	549	252180	3	474	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	30	1	0.53177	544	252180	1	479	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0.99997	0.22287	228	252170	8	795	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0.76345	0.81623	835	192530	59653	188	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99956	0.62757	642	252070	111	381	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99953	0.62366	638	252060	118	385	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99949	0.64125	656	252050	128	367	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99979	0.73998	757	252130	54	266	0

Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99972	0.74291	760	252110	70	263	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99967	0.76051	778	252100	82	245	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99966	0.6999	716	252090	86	307	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99949	0.76735	785	252050	128	238	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99962	0.74291	760	252080	95	263	0
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	1023	0	252180	0	0
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	1023	0	252180	0	0
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	30	0	1	1023	0	252180	0	0
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99902	0.70968	726	251930	246	297	0
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99905	0.70381	720	251940	239	303	0
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	30	0.99903	0.7087	725	251940	244	298	0
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	30	0.96705	0.87292	893	243870	8309	130	0
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	30	0.97516	0.87097	891	245920	6264	132	0
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	30	0.9889	0.85044	870	249380	2799	153	0
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	30	0.97928	0.86999	890	246960	5225	133	0
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	30	0.97126	0.87195	892	244930	7248	131	0
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	30	0.973	0.87781	898	245370	6810	125	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	30	0	1	1023	0	252180	0	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	30	1	0	0	252180	0	1023	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	30	1	NaN	0	10	0	0	253190
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99996	0.57771	591	252170	9	432	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99996	0.58749	601	252170	10	422	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	30	0.99994	0.60411	618	252160	15	405	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	30	0	0.99511	1018	0	252180	5	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	30	0.99999	0.44184	452	252180	3	571	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	30	0.98945	0.95376	825	8348	89	40	243900
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	30	0	1	1023	0	252180	0	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99994	0.57869	592	252170	14	431	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	30	0.99998	0.56696	580	252170	6	443	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0	1	1023	0	252180	0	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	30	1	0	0	252180	0	1023	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0	1	1023	0	252180	0	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99933	0.65787	673	252010	168	350	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99954	0.62268	637	252060	116	386	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99953	0.62757	642	252060	119	381	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99952	0.73216	749	252060	121	274	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99959	0.71652	733	252080	103	290	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99964	0.74878	766	252090	90	257	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99943	0.7087	725	252040	143	298	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99986	0.7263	743	252140	35	280	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99956	0.72532	742	252070	111	281	0
Radial Basis Network	3	-	-	0.01	-	44202.mat	50	0.90901	0.88706	1398	493220	49368	178	0
Radial Basis Network	5	-	-	0.01	-	44202.mat	50	0.90436	0.89404	1409	490690	51892	167	0
Radial Basis Network	29	-	-	0.01	-	44202.mat	50	0.86006	0.95241	1501	466660	75928	75	0
FeedForward	3	traingd	mse	1.00E-006	-	44202.mat	50	0.81088	0.82107	1294	439970	102610	282	0
FeedForward	5	traingd	mse	1.00E-006	-	44202.mat	50	0.77018	0.80584	1270	417890	124700	306	0
FeedForward	29	traingd	mse	1.00E-006	-	44202.mat	50	0.90438	0.81155	1279	490700	51883	297	0
FeedForward	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99894	0.20362	304	540910	573	1189	1186
FeedForward	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.99974	0.41496	649	542440	143	915	16
FeedForward	29	trainrp	mse	1.00E-006	-	44202.mat	50	0.99753	0.61104	963	541240	1341	613	0
FeedForward	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.98077	0.76586	1207	532150	10432	369	0
FeedForward	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.97789	0.7665	1208	530590	11994	368	0
FeedForward	29	trainscg	mse	1.00E-006	-	44202.mat	50	0.96824	0.74175	1169	525350	17234	407	0

Group Classification

Layer Recurrent Network	3	traingd	mse	1.00E-006	-	44202.mat	50	0.87671	0.81662	1287	475690	66893	289	0
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	44202.mat	50	0.7556	0.79759	1257	409980	132610	319	0
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	44202.mat	50	0.9073	0.76904	1212	492290	50297	364	0
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99977	0.45114	711	542460	126	865	0
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.9977	0.30212	442	541320	1246	1021	136
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	44202.mat	50	0.99873	0.61168	964	541890	691	612	0
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.9534	0.80203	1264	517300	25286	312	0
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.97968	0.77094	1215	531560	11026	361	0
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	44202.mat	50	0.97105	0.78807	1242	526880	15709	334	0
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	50	0.99867	0.3217	507	541860	723	1069	0
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	50	0.99986	0.5368	846	542510	77	730	0
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	50	0.99907	0.45178	712	542080	504	864	0
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	50	0.99767	0.64657	1019	541320	1263	557	0
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	50	0.99893	0.6453	1017	542000	580	559	0
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	50	0.99826	0.66434	1047	541640	945	529	0
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	50	0.70903	0.81536	1285	384710	157880	291	0
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	50	0.80202	0.81916	1291	435160	107420	285	0
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	50	0.91044	0.81028	1277	493990	48594	299	0
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	50	0.7461	0.8217	1295	404820	137760	281	0
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	50	0.87595	0.8217	1295	475280	67308	281	0
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	50	0.89597	0.81472	1284	486140	56445	292	0
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	50	0	0.99429	1567	0	542580	9	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	542580	0	1413	163
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	50	0.99999	0.30774	485	542580	4	1091	1
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99988	0.55556	875	542520	64	700	1
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99992	0.35832	545	542540	45	976	55
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99932	0.48089	755	542220	368	815	6
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.001268	0.81916	1291	688	541900	285	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.99996	0.20171	307	542560	24	1215	54
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.99871	0.46928	718	541890	698	812	46
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.000033185	0.97843	1542	18	542390	34	175
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	50	1	0.0117	15	542390	0	1267	485
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.99744	0.61992	977	541200	1387	599	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.99999	0.019036	30	542580	6	1546	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.99999	0.043782	69	542580	6	1507	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.99953	0.54188	854	542330	257	722	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99844	0.64848	1022	541740	848	554	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99827	0.65102	1026	541650	936	550	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99895	0.62246	981	542010	570	595	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.97563	0.77475	1221	529360	13225	355	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.97258	0.79188	1248	527710	14877	328	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.96756	0.79188	1248	524980	17603	328	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.97291	0.78997	1245	527890	14699	331	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.97356	0.77919	1228	528240	14346	348	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.96504	0.79695	1256	523610	18971	320	0
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	542580	0	1576	0
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	50	0	1	1576	0	542580	0	0
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	50	0	1	1576	0	542580	0	0
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	50	0.99855	0.66244	1044	541800	788	532	0
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	50	0.99834	0.66371	1046	541680	902	530	0
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	50	0.99797	0.6618	1043	541480	1103	533	0
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	50	0.81342	0.84264	1328	441350	101240	248	0
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	50	0.7139	0.81853	1290	387350	155230	286	0

FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	50	0.89738	0.81662	1287	486900	55681	289	0
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	50	0.7217	0.84391	1330	391580	151000	246	0
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	50	0.84885	0.82551	1301	460570	82012	275	0
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	50	0.90293	0.81345	1282	489910	52671	294	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	50	0	1	1576	0	542580	0	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	42	0	10	544110
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	542580	0	1576	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99955	0.59708	941	542340	242	635	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99936	0.61041	962	542240	347	614	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	50	0.99839	0.62944	992	541710	871	584	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.99958	0.6109	953	541920	230	607	446
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.9999	0.5719	875	540600	53	655	1980
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	50	0.97386	0.88527	1088	42612	1144	141	499180
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.99961	0.60406	952	542370	214	624	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	50	1	0.41968	546	542320	2	755	535
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	50	0.9998	0.58312	919	542480	109	657	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0	1	1576	0	542580	0	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	542580	0	1576	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	42	0	10	544110
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99818	0.66307	1045	541600	987	531	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99827	0.66053	1041	541650	939	535	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99856	0.65419	1031	541800	784	545	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.96634	0.79315	1250	524320	18262	326	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.97925	0.77411	1220	531320	11261	356	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.96999	0.78997	1245	526300	16283	331	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.98337	0.74683	1177	533560	9024	399	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.98262	0.76142	1200	533150	9430	376	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.96556	0.79505	1253	523900	18684	323	0
Radial Basis Network	3	-	-	0.01	-	44202.mat	70	0.91086	0.87137	1802	522020	51085	266	0
Radial Basis Network	5	-	-	0.01	-	44202.mat	70	0.90588	0.87476	1809	519160	53941	259	0
Radial Basis Network	29	-	-	0.01	-	44202.mat	70	0.86446	0.93762	1939	495420	77676	129	0
FeedForward	3	traingd	mse	1.00E-006	-	44202.mat	70	0.81378	0.82689	1710	466380	106720	358	0
FeedForward	5	traingd	mse	1.00E-006	-	44202.mat	70	0.77328	0.82592	1708	443170	129930	360	0
FeedForward	29	traingd	mse	1.00E-006	-	44202.mat	70	0.90508	0.81673	1689	518700	54398	379	0
FeedForward	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99893	0.23288	459	571300	613	1512	1285
FeedForward	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99971	0.43288	890	572930	165	1166	16
FeedForward	29	trainrp	mse	1.00E-006	-	44202.mat	70	0.99755	0.61219	1266	571700	1403	802	0
FeedForward	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.98075	0.77031	1593	562070	11030	475	0
FeedForward	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.97794	0.76789	1588	560460	12642	480	0
FeedForward	29	trainscg	mse	1.00E-006	-	44202.mat	70	0.96819	0.75387	1559	554870	18232	509	0
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	44202.mat	70	0.8781	0.82302	1702	503240	69862	366	0
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	44202.mat	70	0.75871	0.8206	1697	434820	138280	371	0
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	44202.mat	70	0.90792	0.78143	1616	520330	52771	452	0
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99975	0.44342	917	572960	145	1151	0
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99767	0.31662	619	571730	1338	1336	143
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	44202.mat	70	0.99869	0.60832	1258	572350	748	810	0
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.95331	0.80271	1660	546340	26756	408	0
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.97969	0.77176	1596	561460	11642	472	0
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	44202.mat	70	0.97101	0.78917	1632	556490	16612	436	0
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	70	0.9987	0.31044	642	572360	743	1426	0
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	70	0.99983	0.54014	1117	573000	97	951	0
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	70	0.99904	0.46132	954	572550	548	1114	0
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	70	0.99766	0.64652	1337	571760	1339	731	0

Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	70	0.99887	0.64507	1334	572450	646	734	0
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	70	0.99823	0.66199	1369	572080	1016	699	0
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	70	0.7118	0.83607	1729	407940	165170	339	0
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	70	0.80476	0.83172	1720	461210	111890	348	0
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	70	0.91102	0.81238	1680	522110	50993	388	0
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	70	0.74968	0.83994	1737	429640	143460	331	0
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	70	0.87711	0.82495	1706	502670	70429	362	0
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	70	0.89686	0.81721	1690	513990	59110	378	0
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	70	0	0.99565	2059	0	573100	9	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	573100	0	1898	170
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	70	0.99999	0.29304	606	573100	4	1462	1
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99986	0.5583	1154	573020	78	913	1
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.9999	0.35157	707	573040	56	1304	57
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99932	0.46411	957	572710	391	1105	6
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.0012319	0.80174	1658	706	572390	410	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.99995	0.23663	469	573070	27	1513	86
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.99867	0.49654	1004	572340	760	1018	46
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.000031418	0.98356	2034	18	572910	34	175
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	70	1	0.026377	45	572910	0	1661	553
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.99741	0.62186	1286	571620	1485	782	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.99999	0.017892	37	573090	6	2031	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.99999	0.05029	104	573090	6	1964	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.9995	0.52273	1081	572820	285	987	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99839	0.64942	1343	572180	924	725	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99824	0.65135	1347	572090	1007	721	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99892	0.62814	1299	572480	621	769	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.97564	0.77708	1607	559140	13958	461	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.97265	0.79159	1637	557430	15672	431	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.96754	0.79207	1638	554500	18605	430	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.97286	0.79062	1635	557540	15556	433	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.97346	0.78143	1616	557890	15208	452	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.96497	0.79642	1647	553030	20074	421	0
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	573100	0	2068	0
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	44202.mat	70	0	1	2068	0	573100	0	0
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	44202.mat	70	0	1	2068	0	573100	0	0
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	44202.mat	70	0.99849	0.66199	1369	572240	865	699	0
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	44202.mat	70	0.9983	0.66393	1373	572130	974	695	0
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	44202.mat	70	0.99795	0.66199	1369	571930	1174	699	0
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	44202.mat	70	0.81594	0.85203	1762	467610	105490	306	0
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	44202.mat	70	0.71672	0.83849	1734	410760	162350	334	0
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	44202.mat	70	0.89813	0.8177	1691	514720	58379	377	0
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	44202.mat	70	0.72604	0.85493	1768	416090	157010	300	0
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	44202.mat	70	0.85089	0.83075	1718	487650	85454	350	0
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	44202.mat	70	0.90363	0.81528	1686	517870	55229	382	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	44202.mat	70	0	1	2068	0	573100	0	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	56	0	10	575100
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	573100	0	2068	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.9995	0.59671	1234	572810	287	834	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99931	0.60832	1258	572700	396	810	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	44202.mat	70	0.99835	0.63056	1304	572150	946	764	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.99953	0.6081	1246	572370	269	803	484
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.99986	0.57086	1144	570950	79	860	2131
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	44202.mat	70	0.97274	0.87834	1415	44039	1234	196	528280

FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.99956	0.60251	1246	572850	250	822	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.99999	0.41911	715	572830	3	991	625
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	44202.mat	70	0.99976	0.58366	1207	572960	138	861	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0	1	2068	0	573100	0	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	573100	0	2068	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	56	0	10	575100
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99811	0.66393	1373	572020	1081	695	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99824	0.66199	1369	572090	1011	699	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99852	0.65522	1355	572250	848	713	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.96632	0.79304	1640	553800	19303	428	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.9793	0.7766	1606	561240	11862	462	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.96992	0.79062	1635	555860	17241	433	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.98339	0.74613	1543	563580	9521	525	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.98263	0.75967	1571	563150	9953	497	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.96551	0.79594	1646	553330	19769	422	0
Radial Basis Network	3	-	-	0.01	-	63502.mat	30	0.96671	0.67875	1105	159380	5489	523	0
Radial Basis Network	5	-	-	0.01	-	63502.mat	30	0.95835	0.72359	1178	158000	6866	450	0
Radial Basis Network	29	-	-	0.01	-	63502.mat	30	0.85976	0.77948	1269	141750	23121	359	0
FeedForward	3	traingd	mse	1.00E-006	-	63502.mat	30	0.8706	0.72912	1187	143530	21333	441	0
FeedForward	5	traingd	mse	1.00E-006	-	63502.mat	30	0.9865	0.67813	1104	162640	2226	524	0
FeedForward	29	traingd	mse	1.00E-006	-	63502.mat	30	0.98688	0.69472	1131	162700	2163	497	0
FeedForward	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.99768	0.46867	763	164490	382	865	0
FeedForward	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.99993	0.45851	746	164720	11	881	137
FeedForward	29	trainrp	mse	1.00E-006	-	63502.mat	30	0.99957	0.4785	768	164450	70	837	374
FeedForward	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.99451	0.63759	1038	163960	905	590	0
FeedForward	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.99882	0.61268	995	164670	194	629	4
FeedForward	29	trainscg	mse	1.00E-006	-	63502.mat	30	0.99468	0.58968	960	163990	877	668	0
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	63502.mat	30	0.99539	0.66585	1084	164110	760	544	0
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	63502.mat	30	0.99666	0.63943	1041	164320	551	587	0
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	63502.mat	30	0.99536	0.5731	933	164100	765	695	0
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	63502.mat	30	1	0	0	112720	0	1013	52762
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.99994	0.24176	352	164440	10	1104	587
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	63502.mat	30	0.99957	0.56388	918	164450	70	710	348
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.99601	0.59889	975	164210	657	653	0
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.99705	0.62408	1016	164380	487	612	0
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	63502.mat	30	0.99415	0.54668	890	163900	965	738	0
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	30	0	0.98833	1609	0	164870	19	0
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	30	0.99207	0.52518	855	163560	1307	773	0
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	30	0.98113	0.47666	776	161410	3104	852	349
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	30	0.97363	0.59889	975	160520	4348	653	0
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	30	0.97921	0.59828	974	161440	3427	654	0
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	30	0.99619	0.60258	981	164240	628	647	0
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	30	0.80911	0.76229	1241	133400	31471	387	0
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	30	0.96244	0.68796	1120	158670	6193	508	0
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	30	0.96423	0.72666	1183	158970	5897	445	0
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	30	0.98841	0.6984	1137	162960	1911	491	0
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	30	0.98832	0.70086	1141	162940	1925	487	0
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	30	0.96877	0.70577	1149	159720	5149	479	0
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	30	NaN	NaN	0	0	0	0	166500
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	164870	0	1628	0
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	30	0.99956	0	0	13510	6	839	152140
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.99983	0.42964	687	164490	28	912	379
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.98328	0.54115	881	161760	2750	747	356

Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.99967	0.53194	866	164460	54	762	351
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	30	0.99991	0.44902	731	164500	14	897	349
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	30	1	0	0	11200	0	679	154620
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	30	0.96859	0.57371	934	159690	5179	694	0
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.99673	0.57494	936	164330	539	692	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.99706	0.59459	968	164380	485	660	0
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.99947	0.52126	846	164430	87	777	355
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.99081	0	0	3128	29	10	163330
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.0021714	0.98771	1608	358	164510	20	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.96888	0.48282	773	159740	5130	828	27
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99264	0.58661	955	163650	1214	673	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99853	0.59767	973	164630	242	655	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99974	0.55958	911	164470	43	717	352
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.99771	0.64619	1052	164490	377	576	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.99763	0.57248	932	164480	391	696	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.99848	0.50684	815	164620	251	793	21
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.99715	0.63452	1033	164400	470	595	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.99657	0.60565	986	164300	565	642	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.99306	0.62101	1011	163720	1144	617	0
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	30	0.000097048	1	1628	16	164850	0	0
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	310	0	30	166160
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	1841	0	44	164610
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	30	0.99097	0.58661	955	163380	1489	673	0
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	30	0.99803	0.58968	960	164540	325	668	0
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	30	0.99202	0.59951	976	163200	1313	652	350
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	30	0.99287	0.69103	1125	163690	1175	503	0
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	30	0.99317	0.67322	1096	163740	1126	532	0
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	30	0.98068	0.67076	1092	161680	3185	536	0
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	30	0.78226	0.74201	1208	128970	35898	420	0
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	30	0.88102	0.69902	1138	145250	19616	490	0
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	30	0.99103	0.64128	1044	163390	1479	584	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	716	0	49	165730
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	164870	0	1628	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	30	0	1	1628	0	164870	0	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.99148	0.59337	966	163440	1404	662	27
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.99355	0.58047	945	163800	1063	683	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	30	0.99188	0.58538	953	163530	1338	675	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	30	1	0	0	164870	0	1628	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	30	0	1	1628	0	164870	0	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	30	0.86147	0.88708	1147	53418	8590	146	103190
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.00016983	0.98833	1609	28	164840	19	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	30	0	1	1628	0	164870	0	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	30	0.87151	0.87862	1093	45620	6726	151	112910
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	2605	0	10	163880
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.98177	0	0	2692	50	43	163710
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	30	1	0	0	805	0	73	165620
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.98844	0.61609	1003	162960	1906	625	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99694	0.58907	959	164360	504	669	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99391	0.59644	971	163860	1004	657	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.99757	0.44349	722	164470	400	906	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.99634	0.59459	968	164260	603	660	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.9987	0.60934	992	164650	215	636	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.99675	0.63452	1033	164330	535	595	0

FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.9938	0.62039	1010	163840	1022	618	5
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.99865	0.57678	939	164650	222	689	0
Radial Basis Network	3	-	-	0.01	-	63502.mat	50	0.95977	0.67366	739	109030	4570	358	0
Radial Basis Network	5	-	-	0.01	-	63502.mat	50	0.95973	0.67366	739	109020	4575	358	0
Radial Basis Network	29	-	-	0.01	-	63502.mat	50	0.9569	0.71468	784	108700	4896	313	0
FeedForward	3	traingd	mse	1.00E-006	-	63502.mat	50	0.96552	0.70921	778	109650	3916	319	36
FeedForward	5	traingd	mse	1.00E-006	-	63502.mat	50	0.96576	0.69189	759	109710	3890	338	0
FeedForward	29	traingd	mse	1.00E-006	-	63502.mat	50	0.98828	0.65542	719	112270	1331	378	0
FeedForward	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.96233	0.095716	105	109320	4279	992	0
FeedForward	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.97521	0.73187	535	15498	394	196	98071
FeedForward	29	trainrp	mse	1.00E-006	-	63502.mat	50	0.99029	0.47037	516	112490	1103	581	0
FeedForward	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.98509	0.60073	659	111900	1694	438	0
FeedForward	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.99551	0.63537	697	113090	510	400	0
FeedForward	29	trainscg	mse	1.00E-006	-	63502.mat	50	0.99219	0.58888	646	112710	887	451	0
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	63502.mat	50	0.95981	0.69644	764	109030	4566	333	0
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	63502.mat	50	0.9694	0.69827	766	110120	3476	331	0
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	63502.mat	50	0.9743	0.66454	729	110680	2920	368	0
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	63502.mat	50	1	0.066542	71	113600	0	996	31
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.99364	0.47671	522	112870	723	573	2
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	63502.mat	50	0.99099	0.51139	561	112570	1024	536	0
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.99401	0.58797	645	112920	681	452	0
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.98126	0.60529	664	111470	2129	433	0
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	63502.mat	50	0.98689	0.62078	681	112110	1489	416	0
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.000070424	1	1097	8	113590	0	0
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.000070424	1	1097	8	113590	0	0
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.99288	0.39198	430	112790	809	667	0
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	50	0.99332	0.57156	627	112840	759	470	0
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	50	0.99464	0.56518	620	112990	609	477	0
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	50	0.99449	0.56427	619	112970	626	478	0
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	50	0.9338	0.70647	775	106080	7520	322	0
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	50	0.96246	0.70556	774	109330	4264	323	0
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	50	0.97429	0.69736	765	110680	2921	332	0
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	50	0.92943	0.69644	764	105580	8017	333	0
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	50	0.97914	0.68642	753	111230	2370	344	0
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	50	0.98686	0.66727	732	111760	1488	365	350
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.99706	0.0091158	10	113260	334	1087	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.98443	0	0	2909	46	14	111730
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.99839	0	0	9282	15	277	105120
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.99657	0.52507	576	112860	388	521	350
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.99962	0.41841	459	113200	43	638	354
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.99042	0.46946	515	112510	1088	582	0
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.91115	0.85501	631	24039	2344	107	87573
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.92639	0.60274	396	20602	1637	261	91798
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.98892	0.37648	413	111990	1255	684	349
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.9153	0	0	4506	417	171	109600
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.99984	0.16976	183	113180	18	895	418
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.99467	0.56427	619	112640	604	478	350
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	50	1	NaN	0	419	0	0	114280
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.98648	0.22698	249	112060	1536	848	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.98775	0.31085	341	112210	1391	756	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99688	0.55515	609	112900	353	488	349
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99584	0.56518	620	113120	473	477	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99585	0.56062	615	113130	471	482	0

Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.97239	0.6144	674	110120	3127	423	350
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.98761	0.60985	669	112190	1408	428	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.9948	0.60438	663	113010	591	434	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.97248	0.61167	671	110470	3126	426	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.98071	0.60529	664	111410	2191	433	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.98832	0.60529	664	112270	1327	433	0
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	50	1	0	0	113600	0	1097	0
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.000026409	1	1097	3	113590	0	0
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	50	0.000026409	1	1097	3	113590	0	0
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	50	0.99033	0.57612	632	112500	1098	465	0
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	50	0.98704	0.54603	599	112130	1472	498	0
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	50	0.9932	0.57885	635	112830	772	462	0
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	50	0.93468	0.70647	775	106180	7420	322	0
FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	50	0.95328	0.71012	779	108290	5307	318	0
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	50	0.97627	0.69189	759	110900	2696	338	0
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	50	0.92538	0.71194	781	105120	8477	316	0
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	50	0.9549	0.70191	770	108470	5123	327	0
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	50	0.95694	0.69098	758	108710	4891	339	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.99994	0	0	113590	7	1097	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	50	1	NaN	0	190	0	0	114500
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	50	0.000008803	1	1097	1	113600	0	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.99943	0.26277	283	113180	65	794	370
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.98799	0.5278	579	112230	1364	518	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	50	0.99167	0.54877	602	112320	943	495	338
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.006465	0.81047	774	732	112490	181	514
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	50	1	0	0	113240	0	1037	421
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	50	0.90598	0.88799	658	28406	2948	83	82599
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.99298	0.12306	135	112800	797	962	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	50	1	0	0	113600	0	1097	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	50	0.98782	0.33637	369	112210	1384	728	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.99991	0	0	113590	10	1097	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	50	1	0	0	1311	0	10	113370
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.99994	0	0	113590	7	1097	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99498	0.57794	634	112700	569	463	328
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99726	0.57156	627	113290	311	470	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99359	0.56974	625	112870	728	472	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.9708	0.60529	664	110280	3317	433	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.99279	0.59435	652	112780	819	445	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.9768	0.6381	700	110960	2636	397	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.98217	0.59799	656	111570	2025	441	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.9856	0.43118	473	111960	1636	624	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.97498	0.62078	681	110760	2842	416	0
Radial Basis Network	3	-	-	0.01	-	63502.mat	70	0.92423	0.55852	439	40617	3330	347	0
Radial Basis Network	5	-	-	0.01	-	63502.mat	70	0.91622	0.61323	482	40265	3682	304	0
Radial Basis Network	29	-	-	0.01	-	63502.mat	70	0.92703	0.64631	508	40740	3207	278	0
FeedForward	3	traingd	mse	1.00E-006	-	63502.mat	70	0.95265	0.52799	415	41866	2081	371	0
FeedForward	5	traingd	mse	1.00E-006	-	63502.mat	70	0.97285	0.56997	448	42754	1193	338	0
FeedForward	29	traingd	mse	1.00E-006	-	63502.mat	70	0.97777	0.53308	419	42970	977	367	0
FeedForward	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.99991	0.27481	216	43943	4	570	0
FeedForward	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.99891	0.11196	88	43899	48	698	0
FeedForward	29	trainrp	mse	1.00E-006	-	63502.mat	70	0.9987	0.18066	142	43890	57	644	0
FeedForward	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.98808	0.43511	342	43423	524	444	0
FeedForward	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.99693	0.44911	353	43812	135	433	0

Group Classification

FeedForward	29	trainscg	mse	1.00E-006	-	63502.mat	70	0.98735	0.48219	379	43391	556	407	0
Layer Recurrent Network	3	traingd	mse	1.00E-006	-	63502.mat	70	0.92473	0.59924	471	40639	3308	315	0
Layer Recurrent Network	5	traingd	mse	1.00E-006	-	63502.mat	70	0.9334	0.5916	465	41020	2927	321	0
Layer Recurrent Network	29	traingd	mse	1.00E-006	-	63502.mat	70	0.98878	0.48219	379	43454	493	407	0
Layer Recurrent Network	3	trainrp	mse	1.00E-006	-	63502.mat	70	1	0	0	43947	0	786	0
Layer Recurrent Network	5	trainrp	mse	1.00E-006	-	63502.mat	70	1	0	0	43943	0	762	28
Layer Recurrent Network	29	trainrp	mse	1.00E-006	-	63502.mat	70	0.99841	0.22646	178	43877	70	608	0
Layer Recurrent Network	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.97941	0.44784	352	43042	905	434	0
Layer Recurrent Network	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.98696	0.44529	350	43374	573	436	0
Layer Recurrent Network	29	trainscg	mse	1.00E-006	-	63502.mat	70	0.99377	0.47583	374	43673	274	412	0
Distributed Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	70	0.99672	0.0025445	2	43803	144	784	0
Distributed Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	70	0	1	786	0	43947	0	0
Distributed Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	70	0.99629	0.30407	239	43784	163	547	0
Distributed Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	70	0.99568	0.43893	345	43757	190	441	0
Distributed Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	70	0.99508	0.44148	347	43731	216	439	0
Distributed Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	70	0.99627	0.43003	338	43783	164	448	0
Distributed Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	70	0.93413	0.59796	470	41052	2895	316	0
Distributed Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	70	0.96332	0.57252	450	42335	1612	336	0
Distributed Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	70	0.96088	0.54453	428	42228	1719	358	0
Distributed Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	70	0.92914	0.59542	468	40833	3114	318	0
Distributed Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	70	0.95934	0.57252	450	42160	1787	336	0
Distributed Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	70	0.96423	0.52926	416	42375	1572	370	0
Distributed Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	70	1	NaN	0	538	0	0	44195
Distributed Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43947	0	786	0
Distributed Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	70	0.99474	0	0	1324	7	22	43380
Distributed Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.97922	0.092875	73	43034	913	713	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	70	1	0.10724	83	43935	0	691	24
Distributed Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.9997	0.22646	178	43934	13	608	0
Distributed Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	70	0	0.97964	770	0	43947	16	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	70	1	0	0	43947	0	786	0
Distributed Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	70	0.99841	0.076227	59	43877	70	715	12
Distributed Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.99427	0.27226	214	43695	252	572	0
Distributed Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.98723	0.36387	286	43386	561	500	0
Distributed Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.98657	0.34733	273	43357	590	513	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0	1	786	0	43947	0	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43947	0	786	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.99907	0.11069	87	43906	41	699	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99395	0.42621	335	43681	266	451	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99502	0.41094	323	43728	219	463	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99597	0.41476	326	43770	177	460	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	70	1	0	0	43947	0	786	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.98029	0.46183	363	43081	866	423	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.98862	0.47074	370	43447	500	416	0
Distributed Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.97037	0.43257	340	42645	1302	446	0
Distributed Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.96325	0.46692	367	42332	1615	419	0
Distributed Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.98512	0.50382	396	43293	654	390	0
FF Input Time Delay	3	traingd	mse	1.00E-006	hardlim	63502.mat	70	0	1	786	0	43947	0	0
FF Input Time Delay	5	traingd	mse	1.00E-006	hardlim	63502.mat	70	0	1	786	0	43947	0	0
FF Input Time Delay	29	traingd	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43947	0	786	0
FF Input Time Delay	3	traingd	mse	1.00E-006	purelin	63502.mat	70	0.9967	0.4173	328	43802	145	458	0
FF Input Time Delay	5	traingd	mse	1.00E-006	purelin	63502.mat	70	0.99128	0.43511	342	43564	383	444	0
FF Input Time Delay	29	traingd	mse	1.00E-006	purelin	63502.mat	70	0.99511	0.42494	334	43732	215	452	0
FF Input Time Delay	3	traingd	mse	1.00E-006	logsig	63502.mat	70	0.91528	0.60051	472	40224	3723	314	0

Group Classification

FF Input Time Delay	5	traingd	mse	1.00E-006	logsig	63502.mat	70	0.95404	0.58524	460	41927	2020	326	0
FF Input Time Delay	29	traingd	mse	1.00E-006	logsig	63502.mat	70	0.97461	0.57125	449	42831	1116	337	0
FF Input Time Delay	3	traingd	mse	1.00E-006	tansig	63502.mat	70	0.91642	0.5916	465	40274	3673	321	0
FF Input Time Delay	5	traingd	mse	1.00E-006	tansig	63502.mat	70	0.93176	0.59542	468	40948	2999	318	0
FF Input Time Delay	29	traingd	mse	1.00E-006	tansig	63502.mat	70	0.97128	0.58015	456	42685	1262	330	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	hardlim	63502.mat	70	0	1	786	0	43947	0	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43947	0	786	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43947	0	786	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.99069	0.32443	255	43538	409	531	0
FF Input Time Delay	5	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.99679	0.23537	185	43806	141	601	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	purelin	63502.mat	70	0.99185	0.33842	266	43589	358	520	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	logsig	63502.mat	70	0.99995	0.075255	59	43945	2	725	2
FF Input Time Delay	5	trainrp	mse	1.00E-006	logsig	63502.mat	70	1	NaN	0	10	0	0	44723
FF Input Time Delay	29	trainrp	mse	1.00E-006	logsig	63502.mat	70	0.97715	0.4173	328	42943	1004	458	0
FF Input Time Delay	3	trainrp	mse	1.00E-006	tansig	63502.mat	70	1	0	0	361	0	10	44362
FF Input Time Delay	5	trainrp	mse	1.00E-006	tansig	63502.mat	70	0.9856	0.31425	247	43314	633	539	0
FF Input Time Delay	29	trainrp	mse	1.00E-006	tansig	63502.mat	70	0	1	786	0	43947	0	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43947	0	786	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43947	0	786	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0	1	786	0	43947	0	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99549	0.40712	320	43749	198	466	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99404	0.42494	334	43685	262	452	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99561	0.42748	336	43754	193	450	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.96776	0.44656	351	42530	1417	435	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.98291	0.43893	345	43196	751	441	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.98601	0.45674	359	43332	615	427	0
FF Input Time Delay	3	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.98746	0.43766	344	43396	551	442	0
FF Input Time Delay	5	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.98469	0.44402	349	43274	673	437	0
FF Input Time Delay	29	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.98896	0.47455	373	43462	485	413	0

Reduced Dimension Single

Network	Number Characteristics	Number Neurons Network	Training Function	Performance Function	Training Goal	Activation Function	Input	Percentage Crysis (0-100)	Specificity	Sensibility	True Positives	True Negatives	False Positives	False Negatives	Invalid Data
Radial Basis Network	5	3	-	-	0.01	-	44202.mat	30	0.95657	0.78123	1607	548230	24893	450	0
Radial Basis Network	5	5	-	-	0.01	-	44202.mat	30	0.95662	0.78123	1607	548260	24861	450	0
Radial Basis Network	15	3	-	-	0.01	-	44202.mat	30	0.93239	0.84881	1746	534370	38748	311	0
Radial Basis Network	15	5	-	-	0.01	-	44202.mat	30	0.9348	0.842	1732	535760	37366	325	0
Radial Basis Network	5	3	-	-	0.01	-	44202.mat	50	0.95551	0.78649	1234	518460	24141	335	0
Radial Basis Network	5	5	-	-	0.01	-	44202.mat	50	0.95557	0.78649	1234	518490	24110	335	0
Radial Basis Network	15	3	-	-	0.01	-	44202.mat	50	0.93307	0.87189	1368	506280	36318	201	0
Radial Basis Network	15	5	-	-	0.01	-	44202.mat	50	0.93544	0.86424	1356	507570	35030	213	0
Radial Basis Network	5	3	-	-	0.01	-	44202.mat	70	0.97756	0.83039	847	246530	5660	173	0
Radial Basis Network	5	5	-	-	0.01	-	44202.mat	70	0.97763	0.83039	847	246550	5642	173	0
Radial Basis Network	15	3	-	-	0.01	-	44202.mat	70	0.972	0.88922	907	245130	7062	113	0
Radial Basis Network	15	5	-	-	0.01	-	44202.mat	70	0.97105	0.88725	905	244890	7300	115	0
FeedForward	5	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99482	0.62947	1286	569940	2970	757	222
FeedForward	5	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.99727	0.5951	1214	571430	1567	826	145
FeedForward	5	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.94688	0.7894	1623	542580	30437	433	104
FeedForward	5	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.95977	0.7714	1586	549880	23050	470	195
FeedForward	15	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.9862	0.66099	1359	565130	7910	697	86
FeedForward	15	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.97399	0.69178	1423	558110	14902	634	110
FeedForward	15	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.9706	0.6696	1368	555090	16815	675	1235
FeedForward	15	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.95244	0.67397	1385	545540	27243	670	344
FeedForward	5	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99471	0.62789	977	539530	2871	579	217
FeedForward	5	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.99721	0.59769	930	540970	1515	626	133
FeedForward	5	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.94569	0.79924	1254	513040	29461	315	99
FeedForward	5	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.95886	0.77997	1223	520110	22313	345	184
FeedForward	15	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.9863	0.66071	1036	535090	7434	532	81
FeedForward	15	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.97472	0.69407	1089	528790	13717	480	99
FeedForward	15	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.9701	0.65125	1014	525250	16189	543	1177
FeedForward	15	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.95277	0.65539	1027	516700	25612	540	294
FeedForward	5	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99956	0.67096	677	252070	111	332	19
FeedForward	5	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99973	0.636	643	252120	69	368	12
FeedForward	5	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.97878	0.83725	854	246820	5350	166	22
FeedForward	5	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.98572	0.82255	839	248550	3600	181	43
FeedForward	15	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.9977	0.6951	709	251610	579	311	8
FeedForward	15	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99552	0.73039	745	251050	1131	275	16
FeedForward	15	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.99129	0.64659	655	249750	2195	358	257
FeedForward	15	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.98515	0.64181	654	248390	3743	365	58
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99734	0.54041	1110	571590	1524	944	7
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.99734	0.56613	1160	571570	1525	889	38
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.96952	0.75901	1559	555300	17458	495	363
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.97025	0.75596	1555	556030	17047	502	48
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.98348	0.65806	1351	563570	9465	702	93
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.98907	0.65581	1349	566820	6265	708	35
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.95372	0.67817	1395	546590	26521	662	14
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.95697	0.65824	1354	548440	24660	703	19
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99729	0.53321	835	541130	1471	731	7
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.99731	0.56558	884	541110	1462	679	34
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.96883	0.76884	1204	525360	16902	362	344
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.96957	0.76482	1200	526050	16512	369	43
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.98367	0.65495	1025	533660	8859	540	89
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.98902	0.65519	1028	536610	5956	541	31
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.95365	0.65647	1030	517440	25147	539	13
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.95709	0.63607	998	519300	23280	571	17

Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99972	0.54769	557	252120	70	460	3
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99981	0.60433	614	252140	49	402	6
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.99047	0.81318	827	249710	2403	190	84
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.99056	0.80784	824	249800	2380	196	10
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.9974	0.69253	705	251530	655	313	10
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99824	0.69216	706	251750	444	314	2
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.98539	0.63824	651	248510	3684	369	4
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.9861	0.62255	635	248680	3506	385	3
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	44202.mat	30	1	0.010209	21	573120	0	2036	1
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0.99997	0.30627	630	573110	15	1427	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99985	0.46422	947	573030	86	1093	25
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99979	0.47837	984	573000	118	1073	2
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.96512	0.76863	1578	552450	19967	475	709
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.9799	0.73723	1515	561420	11514	540	187
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.97178	0.75623	1548	555380	16130	499	1617
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.95297	0.77799	1598	545370	26914	456	845
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0	1	2056	0	573120	0	1
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0.027027	0.75	3	1	36	1	575140
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.98037	0.57554	1181	561600	11247	871	279
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.98896	0.58301	1187	565460	6311	849	1370
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.95363	0.71463	1470	546380	26566	587	179
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.96265	0.70858	1454	550920	21376	598	826
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.96898	0.77897	1600	554690	17760	454	679
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.95953	0.76742	1564	545220	22996	474	4920
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	44202.mat	50	1	0.01211	19	542600	0	1550	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.99998	0.30848	484	542590	12	1085	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99986	0.47081	734	542520	77	825	18
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99981	0.48502	761	542490	105	808	2
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.9643	0.777	1216	522570	19348	349	685
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.97942	0.7449	1168	531260	11164	400	182
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.9711	0.76889	1201	525400	15638	361	1566
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.95187	0.79183	1240	515720	26079	326	809
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0	1	1568	0	542600	0	1
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0	0.5	1	0	35	1	544130
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.9811	0.57289	896	532110	10248	668	250
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.98911	0.58301	906	535510	5894	648	1216
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.95276	0.70618	1108	516810	25625	461	170
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.96174	0.69757	1091	521080	20727	473	798
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.96823	0.78863	1235	524740	17218	331	647
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.95881	0.77384	1201	515700	22154	351	4763
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	44202.mat	70	1	0.018627	19	252190	0	1001	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.99999	0.27745	283	252190	3	737	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99997	0.49951	505	252180	7	506	11
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99996	0.52059	531	252180	10	489	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.98863	0.8222	837	249170	2865	181	156
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.99525	0.79392	809	250960	1197	210	35
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.99156	0.81576	828	249730	2126	187	344
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.98193	0.83121	847	247460	4554	172	185
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0	1	1019	0	252190	0	1
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0	NaN	0	0	19	0	253190
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99614	0.60236	612	251190	974	404	32
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.9979	0.60753	613	251570	529	396	103
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.98184	0.70196	716	247570	4580	304	45

Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.98331	0.70138	714	247750	4206	304	237
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.98651	0.83792	853	248650	3400	165	148
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.98452	0.80811	817	246880	3881	194	1440
Radial Basis Network	5	3	-	-	0.01	-	63502.mat	30	0.96339	0.63867	1034	158850	6036	585	0
Radial Basis Network	5	5	-	-	0.01	-	63502.mat	30	0.96334	0.63867	1034	158840	6044	585	0
Radial Basis Network	15	3	-	-	0.01	-	63502.mat	30	0.91019	0.65225	1056	150080	14808	563	0
Radial Basis Network	15	5	-	-	0.01	-	63502.mat	30	0.911	0.64978	1052	150210	14675	567	0
Radial Basis Network	5	3	-	-	0.01	-	63502.mat	50	0.95758	0.62454	682	108790	4819	410	0
Radial Basis Network	5	5	-	-	0.01	-	63502.mat	50	0.95753	0.62454	682	108790	4825	410	0
Radial Basis Network	15	3	-	-	0.01	-	63502.mat	50	0.89864	0.63278	691	102100	11516	401	0
Radial Basis Network	15	5	-	-	0.01	-	63502.mat	50	0.89967	0.63187	690	102210	11399	402	0
Radial Basis Network	5	3	-	-	0.01	-	63502.mat	70	0.94461	0.51786	406	41524	2435	378	0
Radial Basis Network	5	5	-	-	0.01	-	63502.mat	70	0.94454	0.51786	406	41521	2438	378	0
Radial Basis Network	15	3	-	-	0.01	-	63502.mat	70	0.86549	0.5102	400	38046	5913	384	0
Radial Basis Network	15	5	-	-	0.01	-	63502.mat	70	0.86717	0.50893	399	38120	5839	385	0
FeedForward	5	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.98542	0.53011	854	162400	2403	757	96
FeedForward	5	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.98848	0.48267	780	162910	1899	836	85
FeedForward	5	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.94086	0.67264	1089	155120	9750	530	15
FeedForward	5	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.94906	0.66152	1071	156460	8398	548	33
FeedForward	15	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.99229	0.21446	347	163610	1271	1271	5
FeedForward	15	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.98573	0.42434	687	162530	2353	932	2
FeedForward	15	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.95608	0.48137	775	157310	7226	835	359
FeedForward	15	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.95014	0.49166	796	156650	8221	823	12
FeedForward	5	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.98299	0.51702	562	111620	1932	525	70
FeedForward	5	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.98647	0.47064	513	112010	1536	577	71
FeedForward	5	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.93009	0.65385	714	105660	7942	378	14
FeedForward	5	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.94002	0.6456	705	106770	6813	387	26
FeedForward	15	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.99139	0.18607	203	112630	978	888	3
FeedForward	15	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.98401	0.40751	445	111790	1817	647	1
FeedForward	15	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.95089	0.45956	500	107780	5567	588	268
FeedForward	15	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.94436	0.4707	514	107280	6321	578	10
FeedForward	5	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.97735	0.40436	315	42934	995	464	35
FeedForward	5	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.98136	0.36189	283	43114	819	499	28
FeedForward	5	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.90678	0.54082	424	39855	4097	360	7
FeedForward	5	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.92101	0.53189	417	40473	3471	367	15
FeedForward	15	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.98833	0.13776	108	43445	513	676	1
FeedForward	15	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.97832	0.3023	237	43006	953	547	0
FeedForward	15	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.93685	0.34699	271	41067	2768	510	127
FeedForward	15	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.92781	0.36735	288	40781	3173	496	5
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.99154	0.42981	695	163490	1395	922	7
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.98821	0.48916	790	162910	1943	825	34
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.95515	0.65142	1054	157420	7391	564	76
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.95427	0.64917	1051	157330	7539	568	15
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.98885	0.387	625	163020	1839	990	29
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.9912	0.33539	543	163430	1451	1076	1
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.94107	0.48269	781	155170	9716	837	4
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.95051	0.48487	785	156730	8161	834	0
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.9899	0.40788	445	112460	1147	646	6
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.98623	0.46967	511	112030	1564	577	26
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.94737	0.63553	694	107580	5976	398	57
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.9463	0.63278	691	107500	6100	401	13
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.9875	0.36088	393	112170	1420	696	24
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.99014	0.31685	346	112490	1120	746	1

Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.93437	0.45738	499	106150	7456	592	4
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.94466	0.46429	507	107330	6287	585	0
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.98592	0.31162	244	43336	619	539	5
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.98079	0.36236	283	43100	844	498	18
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.93109	0.52168	409	40902	3027	375	30
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.92953	0.51786	406	40852	3097	378	10
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.98216	0.26948	211	43159	784	572	17
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.98644	0.22066	173	43363	596	611	0
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.91496	0.34355	269	40218	3738	514	4
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.92984	0.35969	282	40875	3084	502	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.99999	0.02656	43	164890	1	1576	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.99895	0.14824	240	164710	173	1379	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99682	0.27273	435	164330	524	1160	55
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99616	0.30489	493	164240	633	1124	11
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.95513	0.65306	1056	157360	7392	561	137
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.96506	0.63103	1021	159070	5759	597	57
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.95893	0.64764	1044	157770	6757	568	365
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.94668	0.66234	1071	155980	8785	546	121
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0	1	1618	0	164880	0	3
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0	NaN	0	0	4	0	166500
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99561	0.024707	40	164150	724	1579	8
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.9956	0.039579	64	164110	726	1553	52
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.92398	0.54787	887	152320	12532	732	33
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.93103	0.4573	739	153330	11359	877	199
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.93826	0.47525	768	154610	10174	848	110
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.92995	0.49876	803	152180	11463	807	1256
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.99999	0.020147	22	113610	1	1070	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.99871	0.13278	145	113470	147	947	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99612	0.24744	266	113140	441	809	44
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.9953	0.28506	311	113070	534	780	7
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.94735	0.6367	694	107520	5976	396	118
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.95924	0.6187	675	108930	4629	416	53
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.95182	0.63444	689	107860	5459	397	302
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.93695	0.64803	707	106350	7157	384	103
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0	1	1091	0	113610	0	3
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0	NaN	0	0	3	0	114700
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99544	0.025641	28	113090	518	1064	5
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99534	0.039377	43	113050	529	1049	35
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.91479	0.52381	572	103910	9679	520	28
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.92354	0.42477	463	104780	8675	627	157
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.9318	0.43802	477	105780	7742	612	91
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.92212	0.47232	512	103890	8774	572	957
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.99998	0.0089286	7	43958	1	777	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.99807	0.085459	67	43874	85	717	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99436	0.17335	134	43696	248	639	26
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99315	0.20307	159	43656	301	624	3
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.9308	0.52174	408	40863	3038	374	60
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.94622	0.50192	393	41572	2363	390	25
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.93679	0.51923	405	41049	2770	375	144
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.91629	0.5364	420	40228	3675	363	57
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0	1	784	0	43957	0	2
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0	NaN	0	0	3	0	44740
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99397	0.01148	9	43690	265	775	4

Reduced Dimension Single

Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99367	0.022959	18	43664	278	766	17
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.88766	0.41327	324	39011	4937	460	11
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.90064	0.31545	247	39519	4360	536	81
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.91076	0.32184	252	39995	3919	531	46
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.8971	0.35687	278	39024	4476	501	464

Reduced Dimension Group

Network	Number Characteristics	Number Neurons Network	Training Function	Performance Function	Training Goal	Activation Function	Input	Percentage Crysis (0-100)	Specificity	Sensibility	True Positives	True Negatives	False Positives	False Negatives	Invalid Data
Radial Basis Network	5	3	-	-	0.01	-	44202.mat	30	0.98315	0.78191	1617	563450	9654	451	0
Radial Basis Network	5	5	-	-	0.01	-	44202.mat	30	0.98318	0.78191	1617	563460	9640	451	0
Radial Basis Network	15	3	-	-	0.01	-	44202.mat	30	0.96038	0.86074	1780	550390	22706	288	0
Radial Basis Network	15	5	-	-	0.01	-	44202.mat	30	0.96497	0.85058	1759	553020	20078	309	0
Radial Basis Network	5	3	-	-	0.01	-	44202.mat	50	0.9825	0.78744	1241	533090	9496	335	0
Radial Basis Network	5	5	-	-	0.01	-	44202.mat	50	0.98252	0.78744	1241	533100	9482	335	0
Radial Basis Network	15	3	-	-	0.01	-	44202.mat	50	0.95911	0.88769	1399	520400	22186	177	0
Radial Basis Network	15	5	-	-	0.01	-	44202.mat	50	0.96391	0.87563	1380	523000	19584	196	0
Radial Basis Network	5	3	-	-	0.01	-	44202.mat	70	0.99691	0.83773	857	251400	780	166	0
Radial Basis Network	5	5	-	-	0.01	-	44202.mat	70	0.99692	0.83773	857	251400	777	166	0
Radial Basis Network	15	3	-	-	0.01	-	44202.mat	70	0.99134	0.89541	916	250000	2183	107	0
Radial Basis Network	15	5	-	-	0.01	-	44202.mat	70	0.99035	0.89345	914	249750	2434	109	0
FeedForward	5	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99984	0.63153	1306	573010	93	762	0
FeedForward	5	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.99994	0.60155	1244	573070	35	824	0
FeedForward	5	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.9687	0.79159	1637	555160	17938	431	0
FeedForward	5	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.98001	0.77273	1598	561640	11457	470	0
FeedForward	15	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99923	0.67021	1386	572660	441	682	0
FeedForward	15	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.9941	0.69681	1441	569720	3379	627	0
FeedForward	15	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.9909	0.69923	1446	567890	5213	622	0
FeedForward	15	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.97588	0.70019	1448	559270	13826	620	0
FeedForward	5	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99985	0.6231	982	542500	80	594	0
FeedForward	5	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.99996	0.59772	942	542560	22	634	0
FeedForward	5	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.96725	0.80203	1264	524810	17772	312	0
FeedForward	5	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.9791	0.77919	1228	531240	11341	348	0
FeedForward	15	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99924	0.66942	1055	542170	413	521	0
FeedForward	15	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.99393	0.70051	1104	539290	3293	472	0
FeedForward	15	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.99057	0.68782	1084	537470	5114	492	0
FeedForward	15	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.97496	0.68591	1081	529000	13584	495	0
FeedForward	5	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99994	0.6608	676	252170	14	347	0
FeedForward	5	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99994	0.62952	644	252170	15	379	0
FeedForward	5	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.99674	0.84653	866	251360	823	157	0
FeedForward	5	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.99859	0.82796	847	251830	355	176	0
FeedForward	15	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99967	0.71065	727	252100	82	296	0
FeedForward	15	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99952	0.74976	767	252060	122	256	0
FeedForward	15	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.99944	0.70088	717	252040	141	306	0
FeedForward	15	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.99865	0.68915	705	251840	341	318	0
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99996	0.55513	1148	573080	23	920	0
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.99996	0.56963	1178	573080	23	890	0
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.98806	0.75774	1567	566260	6845	501	0
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.9886	0.75338	1558	566570	6535	510	0
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	44202.mat	30	0.99858	0.65909	1363	572290	811	705	0
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	44202.mat	30	0.99951	0.66199	1369	572820	280	699	0
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	44202.mat	30	0.97693	0.70358	1455	559880	13220	613	0
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	44202.mat	30	0.98109	0.69052	1428	562260	10838	640	0
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99998	0.54378	857	542580	9	719	0
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.99998	0.5698	898	542580	9	678	0
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.98753	0.76777	1210	535820	6764	366	0
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.98813	0.76332	1203	536140	6442	373	0
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	44202.mat	50	0.99857	0.65609	1034	541810	778	542	0
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	44202.mat	50	0.99953	0.66244	1044	542330	254	532	0
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	44202.mat	50	0.97597	0.68845	1085	529540	13041	491	0
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	44202.mat	50	0.98031	0.67386	1062	531900	10682	514	0

Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99997	0.55621	569	252170	8	454	0
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99996	0.60508	619	252170	9	404	0
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.9994	0.8172	836	252030	151	187	0
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.9994	0.81329	832	252030	152	191	0
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	44202.mat	70	0.99967	0.69795	714	252100	83	309	0
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	44202.mat	70	0.99971	0.70186	718	252110	72	305	0
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	44202.mat	70	0.99866	0.69208	708	251840	339	315	0
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	44202.mat	70	0.99868	0.67644	692	251850	334	331	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	44202.mat	30	1	0	0	573100	0	2068	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0.99999	0.30851	638	573100	3	1430	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99999	0.46857	969	573090	8	1099	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99999	0.48549	1004	573090	8	1064	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.98435	0.77031	1593	564130	8967	475	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.99503	0.73694	1524	570250	2847	544	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.99005	0.75242	1556	567400	5705	512	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.97512	0.78095	1615	558840	14261	453	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	44202.mat	30	0	1	2068	0	573100	0	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	44202.mat	30	1	0	0	352	0	26	574790
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99775	0.58317	1206	571810	1292	862	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	44202.mat	30	0.99966	0.5972	1235	572910	194	833	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.97625	0.73259	1515	559490	13613	553	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	44202.mat	30	0.98507	0.73211	1514	564540	8558	554	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.98982	0.78288	1619	567270	5835	449	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	44202.mat	30	0.98244	0.77515	1603	563040	10064	465	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	542580	0	1576	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0.99999	0.31282	493	542580	3	1083	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99999	0.47462	748	542580	5	828	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99999	0.49365	778	542580	5	798	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.98364	0.77728	1225	533710	8877	351	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.99485	0.74556	1175	539790	2796	401	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.98963	0.76586	1207	536960	5627	369	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.97398	0.79251	1249	528470	14118	327	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	44202.mat	50	0	1	1576	0	542580	0	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	44202.mat	50	1	0	0	332	0	15	543810
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99771	0.57107	900	541340	1245	676	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	44202.mat	50	0.99967	0.58947	929	542410	179	647	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.9752	0.72843	1148	529130	13456	428	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	44202.mat	50	0.98448	0.72779	1147	534160	8421	429	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.98944	0.79251	1249	536860	5728	327	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	44202.mat	50	0.98168	0.78363	1235	532640	9942	341	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	44202.mat	70	1	0	0	252180	0	1023	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0.99999	0.2825	289	252180	3	734	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99998	0.5044	516	252180	5	507	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99998	0.53275	545	252180	5	478	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.99928	0.82698	846	252000	182	177	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.99991	0.80059	819	252160	22	204	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.99968	0.81916	838	252100	80	185	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.99769	0.84066	860	251600	583	163	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	44202.mat	70	0	1	1023	0	252180	0	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	44202.mat	70	1	NaN	0	172	0	0	253030
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99964	0.60606	620	252090	91	403	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	44202.mat	70	0.99971	0.6217	636	252110	72	387	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.99761	0.74096	758	251580	602	265	0

Reduced Dimension Group

Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	44202.mat	70	0.9978	0.75464	772	251630	554	251	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.9982	0.85337	873	251730	455	150	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	44202.mat	70	0.99805	0.83871	858	251690	492	165	0
Radial Basis Network	5	3	-	-	0.01	-	63502.mat	30	0.99062	0.64865	1056	163320	1546	572	0
Radial Basis Network	5	5	-	-	0.01	-	63502.mat	30	0.99058	0.64865	1056	163310	1553	572	0
Radial Basis Network	15	3	-	-	0.01	-	63502.mat	30	0.94462	0.65295	1063	155740	9130	565	0
Radial Basis Network	15	5	-	-	0.01	-	63502.mat	30	0.94541	0.64803	1055	155870	9000	573	0
Radial Basis Network	5	3	-	-	0.01	-	63502.mat	50	0.99024	0.6299	691	112490	1109	406	0
Radial Basis Network	5	5	-	-	0.01	-	63502.mat	50	0.99018	0.6299	691	112480	1116	406	0
Radial Basis Network	15	3	-	-	0.01	-	63502.mat	50	0.93732	0.63719	699	106480	7120	398	0
Radial Basis Network	15	5	-	-	0.01	-	63502.mat	50	0.93841	0.63537	697	106600	6997	400	0
Radial Basis Network	5	3	-	-	0.01	-	63502.mat	70	0.98607	0.52163	410	43335	612	376	0
Radial Basis Network	5	5	-	-	0.01	-	63502.mat	70	0.98605	0.52163	410	43334	613	376	0
Radial Basis Network	15	3	-	-	0.01	-	63502.mat	70	0.90643	0.51145	402	39835	4112	384	0
Radial Basis Network	15	5	-	-	0.01	-	63502.mat	70	0.90805	0.51018	401	39906	4041	385	0
FeedForward	5	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.99788	0.54791	892	164520	349	736	0
FeedForward	5	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.99865	0.5172	842	164650	222	786	0
FeedForward	5	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.97722	0.6855	1116	161110	3756	512	0
FeedForward	5	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.98242	0.6769	1102	161970	2898	526	0
FeedForward	15	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.99877	0.20332	331	164660	203	1297	0
FeedForward	15	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.99708	0.457	744	164390	481	884	0
FeedForward	15	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.98478	0.51781	843	162360	2509	785	0
FeedForward	15	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.98101	0.54054	880	161740	3130	748	0
FeedForward	5	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.99795	0.53327	585	113360	233	512	0
FeedForward	5	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.99867	0.50593	555	113450	151	542	0
FeedForward	5	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.97331	0.66727	732	110570	3032	365	0
FeedForward	5	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.97981	0.65998	724	111300	2293	373	0
FeedForward	15	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.99882	0.17411	191	113460	134	906	0
FeedForward	15	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.99724	0.43026	472	113280	313	625	0
FeedForward	15	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.98386	0.49954	548	111760	1834	549	0
FeedForward	15	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.97989	0.52598	577	111310	2285	520	0
FeedForward	5	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.99713	0.41476	326	43821	126	460	0
FeedForward	5	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.99793	0.39313	309	43856	91	477	0
FeedForward	5	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.96114	0.55598	437	42239	1708	349	0
FeedForward	5	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.97226	0.54707	430	42728	1219	356	0
FeedForward	15	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.99859	0.12723	100	43885	62	686	0
FeedForward	15	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.99636	0.31679	249	43787	160	537	0
FeedForward	15	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.97659	0.37023	291	42918	1029	495	0
FeedForward	15	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.97062	0.40712	320	42656	1291	466	0
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.99943	0.47052	766	164770	94	862	0
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.99862	0.5129	835	164640	228	793	0
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.98575	0.66093	1076	162520	2349	552	0
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.98522	0.65786	1071	162430	2437	557	0
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	63502.mat	30	0.99777	0.42199	687	164500	367	941	0
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	63502.mat	30	0.99832	0.36057	587	164590	277	1041	0
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	63502.mat	30	0.97315	0.52334	852	160440	4427	776	0
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	63502.mat	30	0.98266	0.52334	852	162010	2859	776	0
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.99945	0.44941	493	113540	62	604	0
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.99863	0.49043	538	113440	156	559	0
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.98398	0.64175	704	111780	1820	393	0
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.98327	0.63719	699	111700	1901	398	0
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	63502.mat	50	0.99787	0.40201	441	113360	242	656	0
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	63502.mat	50	0.99844	0.35096	385	113420	177	712	0

Reduced Dimension Group

Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	63502.mat	50	0.97119	0.50228	551	110320	3273	546	0
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	63502.mat	50	0.98188	0.50957	559	111540	2058	538	0
Layer Recurrent Network	5	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.99923	0.3486	274	43913	34	512	0
Layer Recurrent Network	5	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.99804	0.39186	308	43861	86	478	0
Layer Recurrent Network	5	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.97786	0.52672	414	42974	973	372	0
Layer Recurrent Network	5	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.97643	0.52036	409	42911	1036	377	0
Layer Recurrent Network	15	3	trainrp	mse	1.00E-006	-	63502.mat	70	0.99725	0.29135	229	43826	121	557	0
Layer Recurrent Network	15	5	trainrp	mse	1.00E-006	-	63502.mat	70	0.99779	0.23028	181	43850	97	605	0
Layer Recurrent Network	15	3	trainscg	mse	1.00E-006	-	63502.mat	70	0.96022	0.36768	289	42199	1748	497	0
Layer Recurrent Network	15	5	trainscg	mse	1.00E-006	-	63502.mat	70	0.97417	0.39059	307	42812	1135	479	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	63502.mat	30	1	0.013514	22	164870	0	1606	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0.99999	0.15663	255	164870	2	1373	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99985	0.2672	435	164840	25	1193	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.9998	0.31204	508	164830	33	1120	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.98601	0.6683	1088	162560	2307	540	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.99053	0.64128	1044	163310	1561	584	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.98795	0.65725	1070	162880	1986	558	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.98133	0.67875	1105	161790	3078	523	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	63502.mat	30	0	1	1628	0	164870	0	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	63502.mat	30	1	NaN	0	40	0	0	166460
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99939	0.0030713	5	164770	100	1623	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	63502.mat	30	0.99939	0.0030713	5	164770	100	1623	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.95791	0.58354	950	157930	6940	678	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	63502.mat	30	0.96342	0.49693	809	158840	6031	819	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.9686	0.5172	842	159690	5177	786	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	63502.mat	30	0.9617	0.53624	873	158550	6314	755	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	63502.mat	50	1	0.0045579	5	113600	0	1092	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0.99998	0.14585	160	113600	2	937	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99986	0.23792	261	113580	16	836	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99979	0.29535	324	113570	24	773	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.98422	0.65178	715	111800	1793	382	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.98995	0.62716	688	112460	1142	409	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.98662	0.63993	702	112080	1520	395	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.97848	0.66272	727	111150	2445	370	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	63502.mat	50	0	1	1097	0	113600	0	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	63502.mat	50	1	NaN	0	30	0	0	114660
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99942	0.0045579	5	113530	66	1092	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	63502.mat	50	0.99948	0.0027347	3	113540	59	1094	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.95384	0.56153	616	108350	5244	481	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	63502.mat	50	0.96034	0.46764	513	109090	4505	584	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.96634	0.47584	522	109770	3824	575	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	63502.mat	50	0.95847	0.50684	556	108880	4718	541	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	hardlim	63502.mat	70	1	0	0	43947	0	786	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0.99995	0.092875	73	43945	2	713	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99966	0.15522	122	43932	15	664	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99952	0.19847	156	43926	21	630	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.97793	0.53817	423	42977	970	363	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.98576	0.51145	402	43321	626	384	0
Distributed Time Delay	5	3	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.98111	0.52417	412	43117	830	374	0
Distributed Time Delay	5	5	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.97005	0.55089	433	42631	1316	353	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	hardlim	63502.mat	70	0	1	786	0	43947	0	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	hardlim	63502.mat	70	1	NaN	0	30	0	0	44703
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99927	0	0	43915	32	786	0

Reduced Dimension Group

Distributed Time Delay	15	5	trainscg	mse	1.00E-006	purelin	63502.mat	70	0.99939	0	0	43920	27	786	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.93367	0.44148	347	41032	2915	439	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	logsig	63502.mat	70	0.9448	0.35242	277	41521	2426	509	0
Distributed Time Delay	15	3	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.95235	0.35496	279	41853	2094	507	0
Distributed Time Delay	15	5	trainscg	mse	1.00E-006	tansig	63502.mat	70	0.9415	0.38041	299	41376	2571	487	0