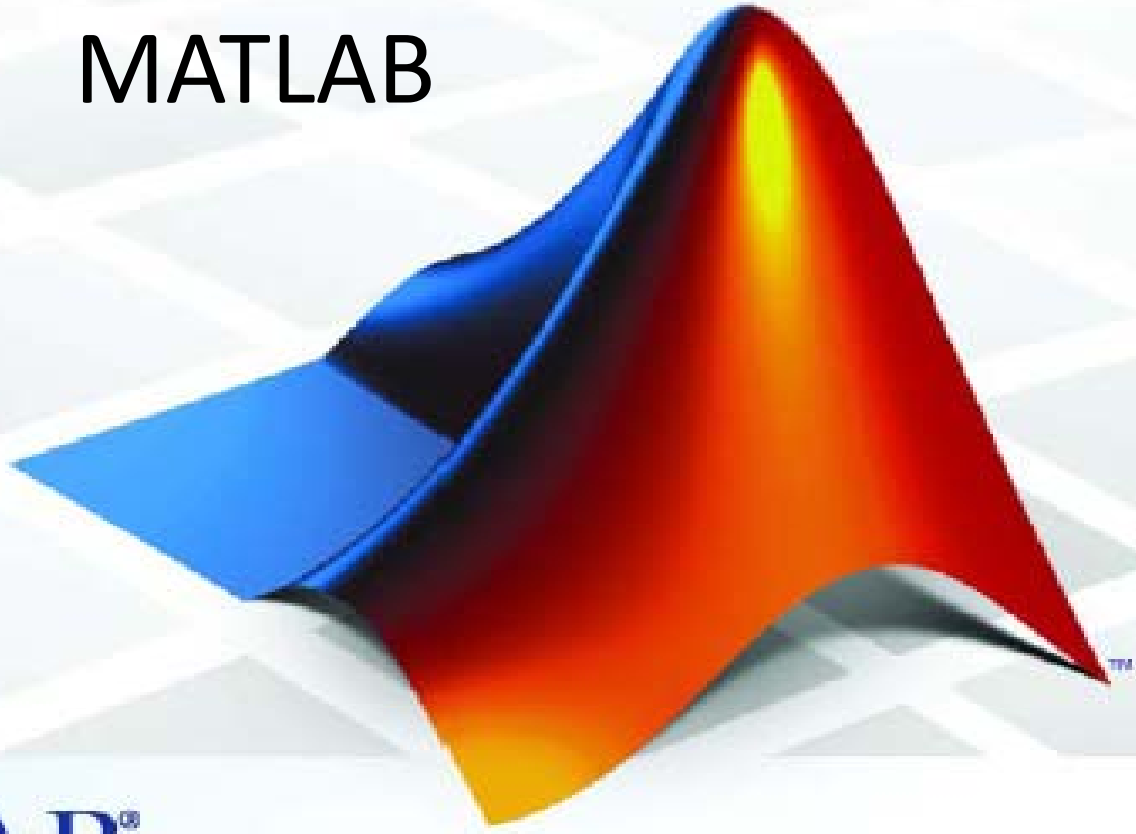
آشنایی با جعبه ابزار شبکه عصبی در نرم افزار MATLAB



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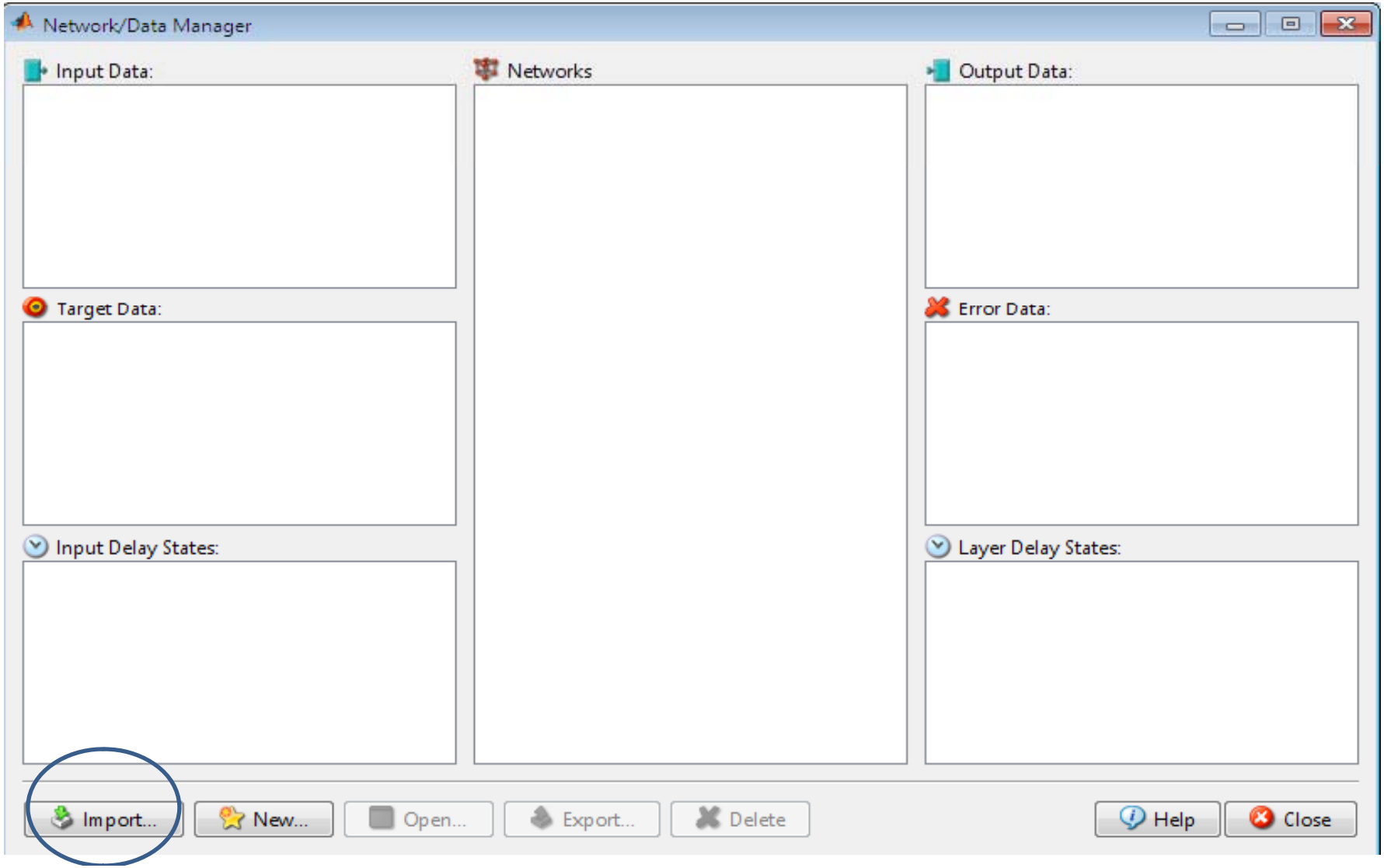
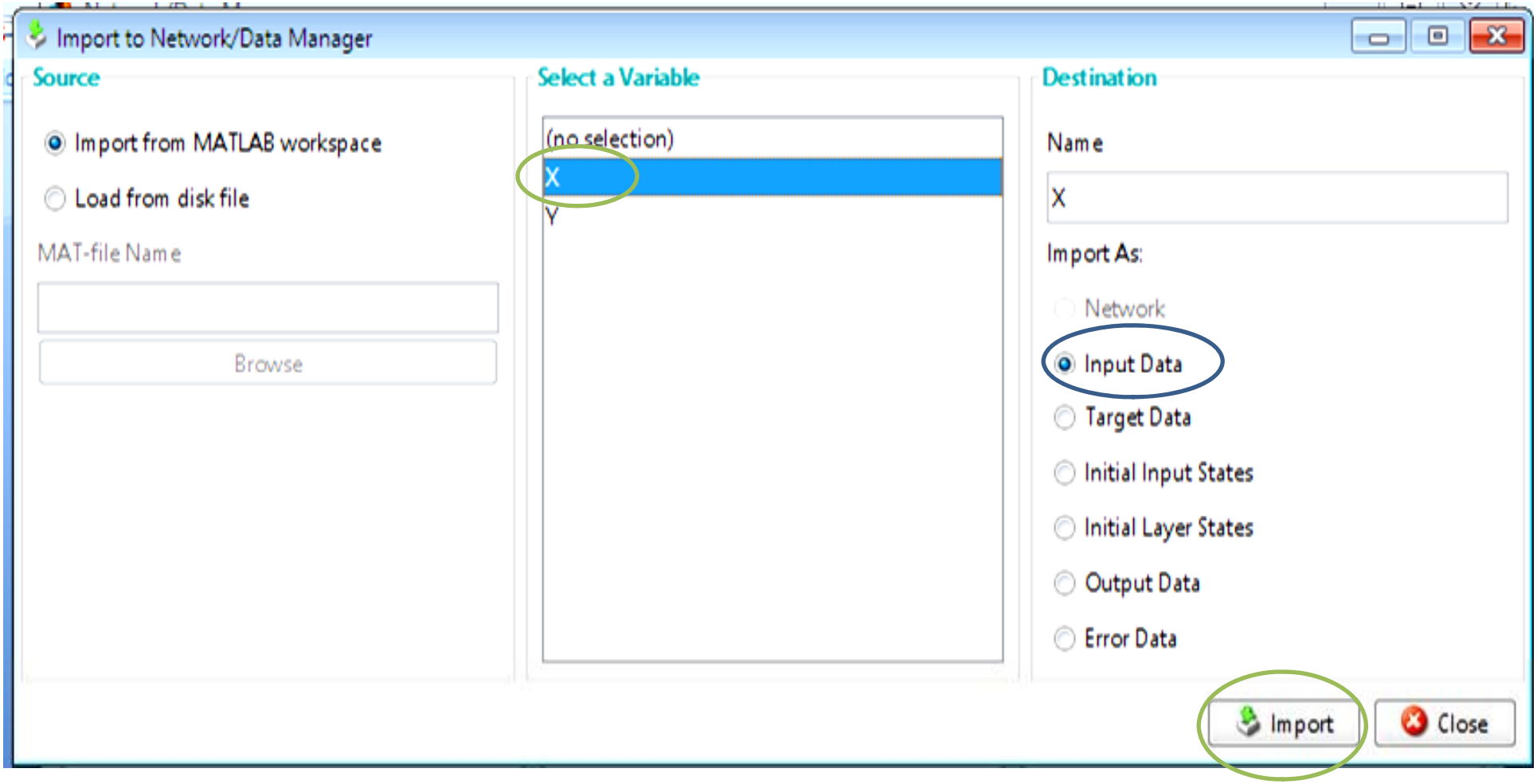
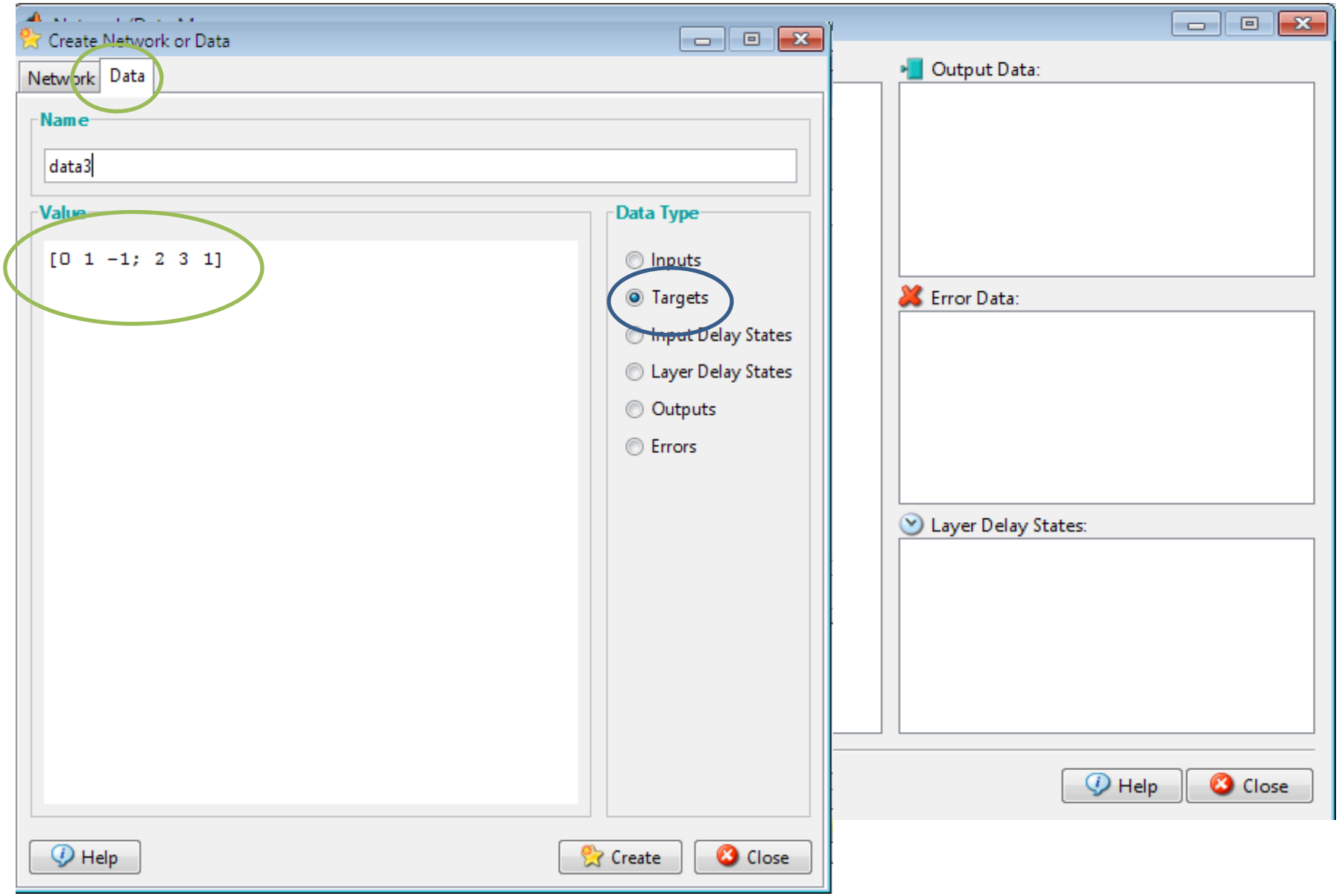
ابتدا در command window دستور nntool را اجرا کنید. محیط گرافیکی جعبه ابزار شبکه عصبی ظاهرمی شود. گام اول انتخاب متغیرهای ورودی است. با انتخاب گزینه Import از منوی ظاهر شده می توانید متغیرهای مورد نظر را انتخاب کنید.



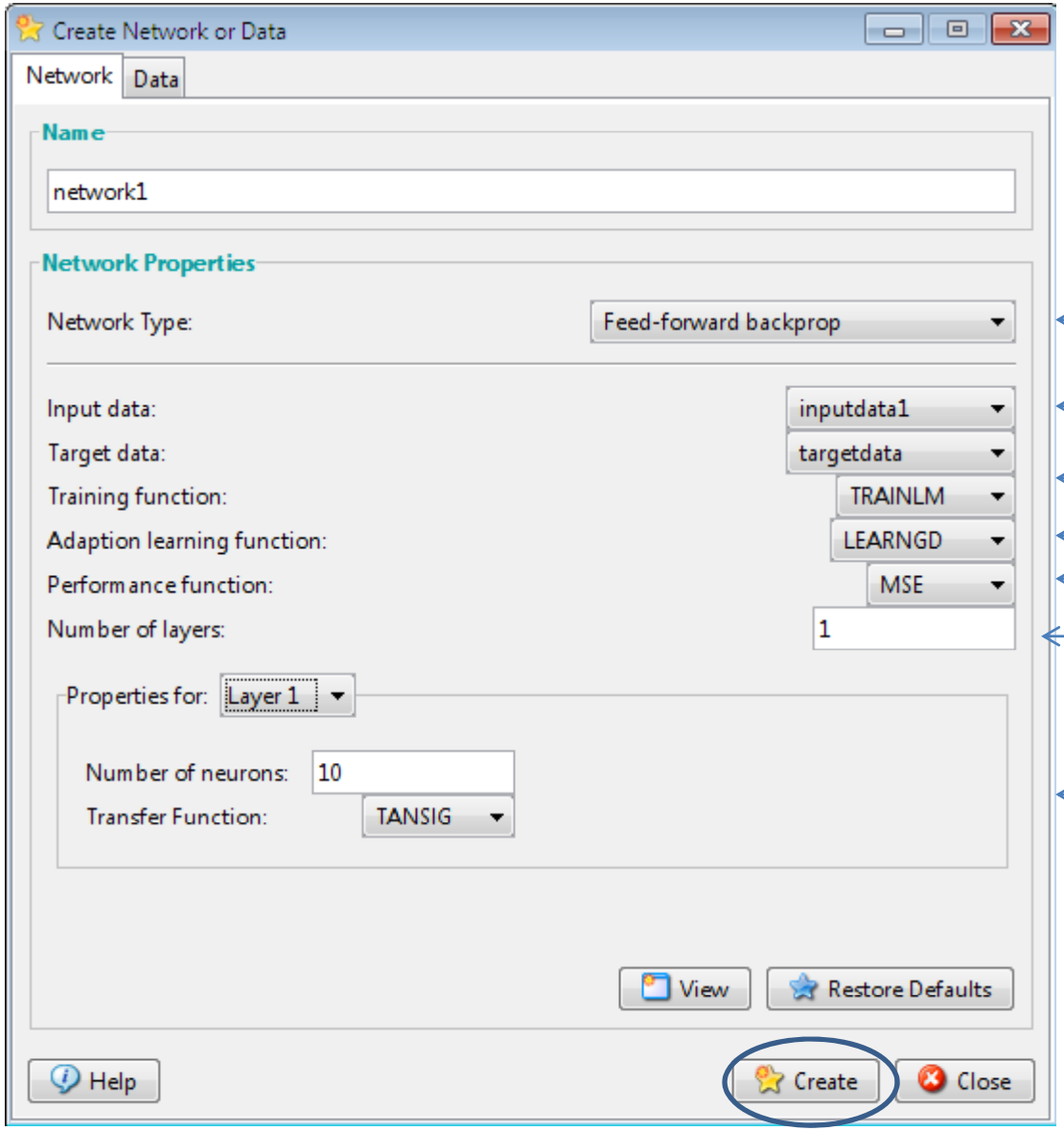
با انتخاب گزینه Import منوی زیر ظاهر می شود که می توانید متغیرهای ورودی، متغیرهای هدف و سایر متغیرها را وارد کنید. دقت کنید قبل از این گام باید متغیرها در workspace تعریف شده باشند. پس از انتخاب هر متغیر و نوع آن گزینه Import را انتخاب کنید



راه دیگر برای انتخاب و یا تعریف متغیرهای ورودی انتخاب گزینه New و سپس استفاده از زبانه data در منوی creat Network or data است



تعیین ویژگی های شبکه



نام شبکه

تعیین نوع شبکه

ماتریس ورودی و خروجی

تابع آموزش

تابع یادگیری

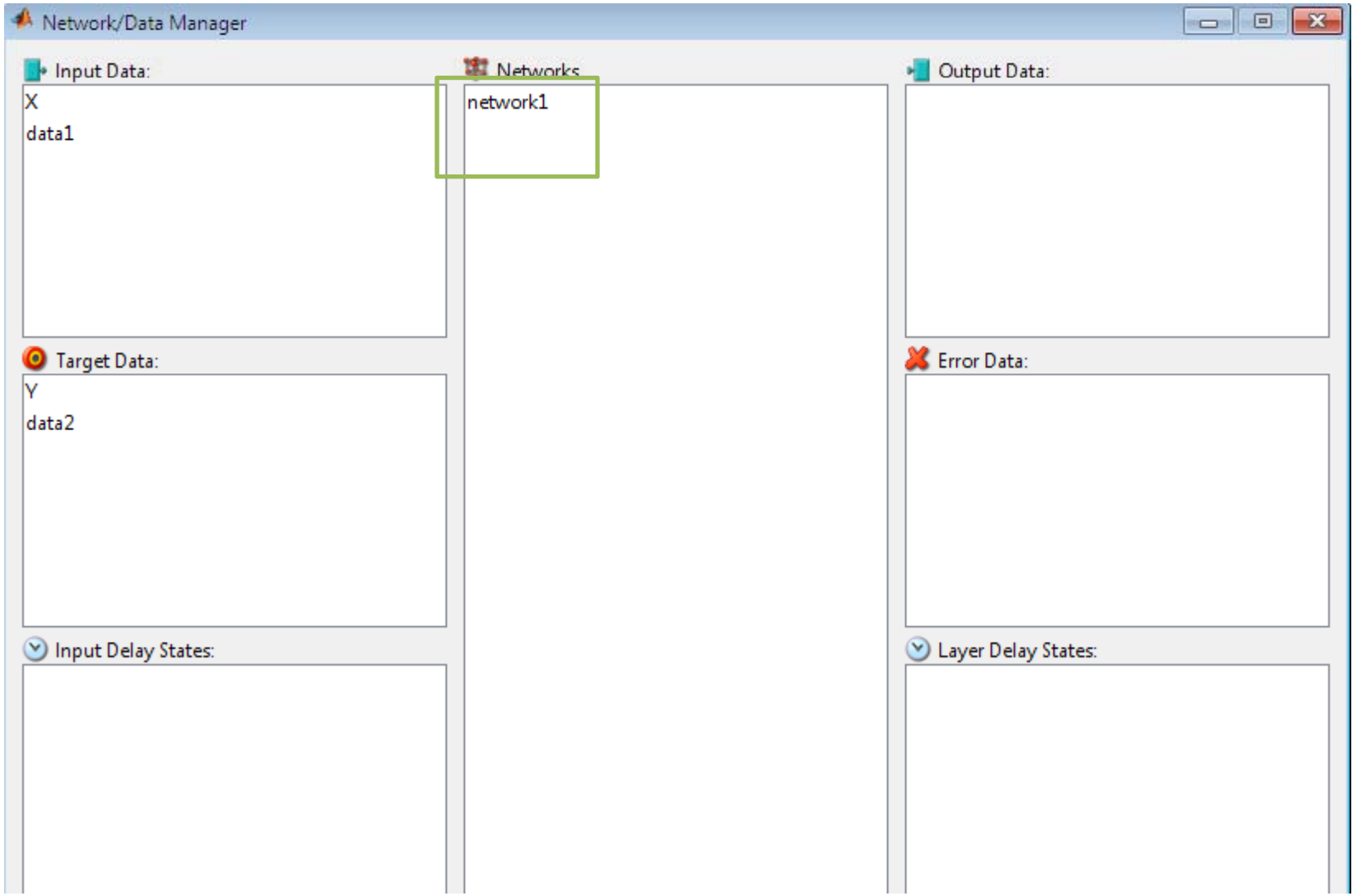
نوع خطای شبکه

تعدا لایه ها

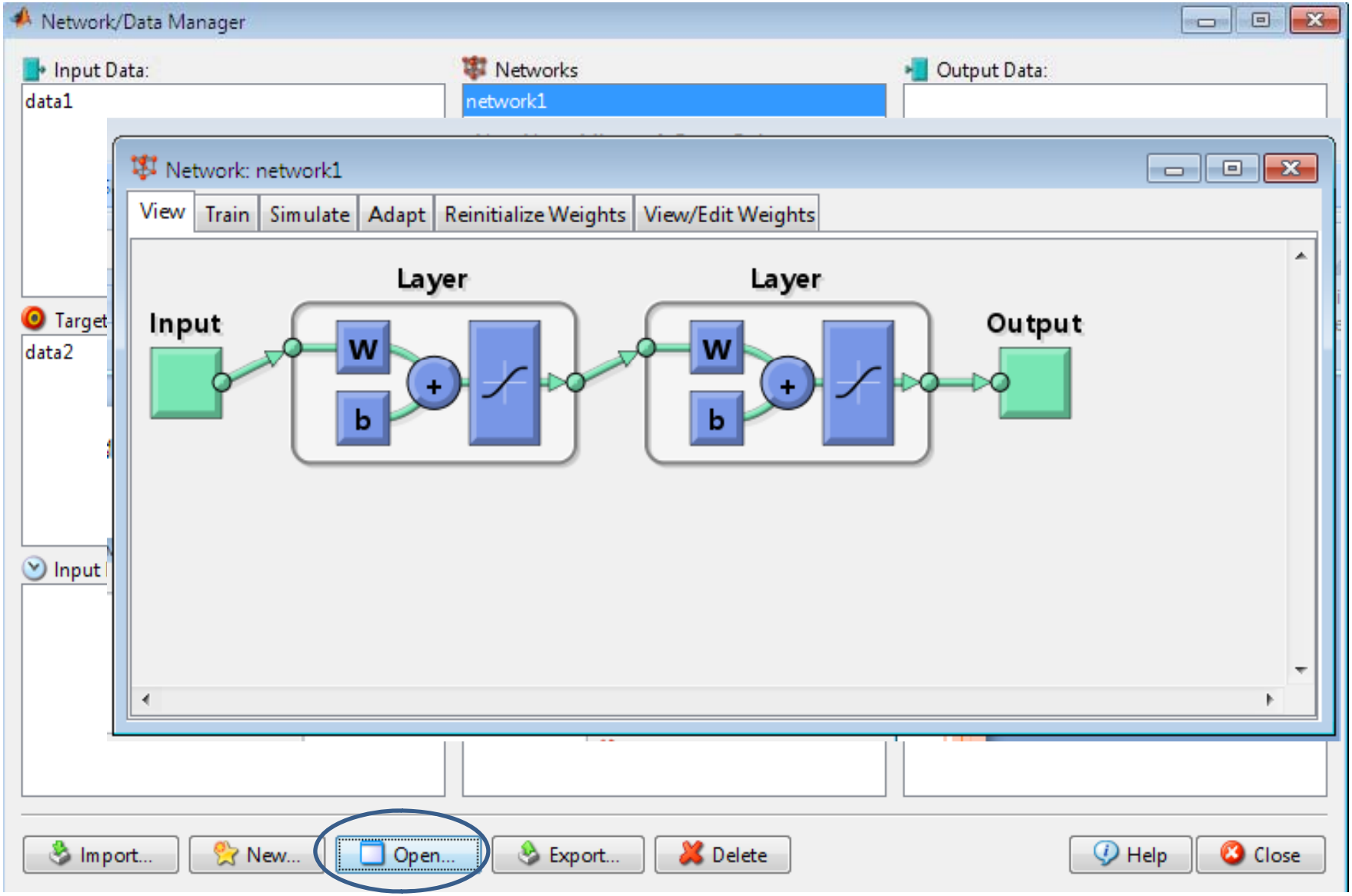
ویژگی های هر لایه

ساخت شبکه

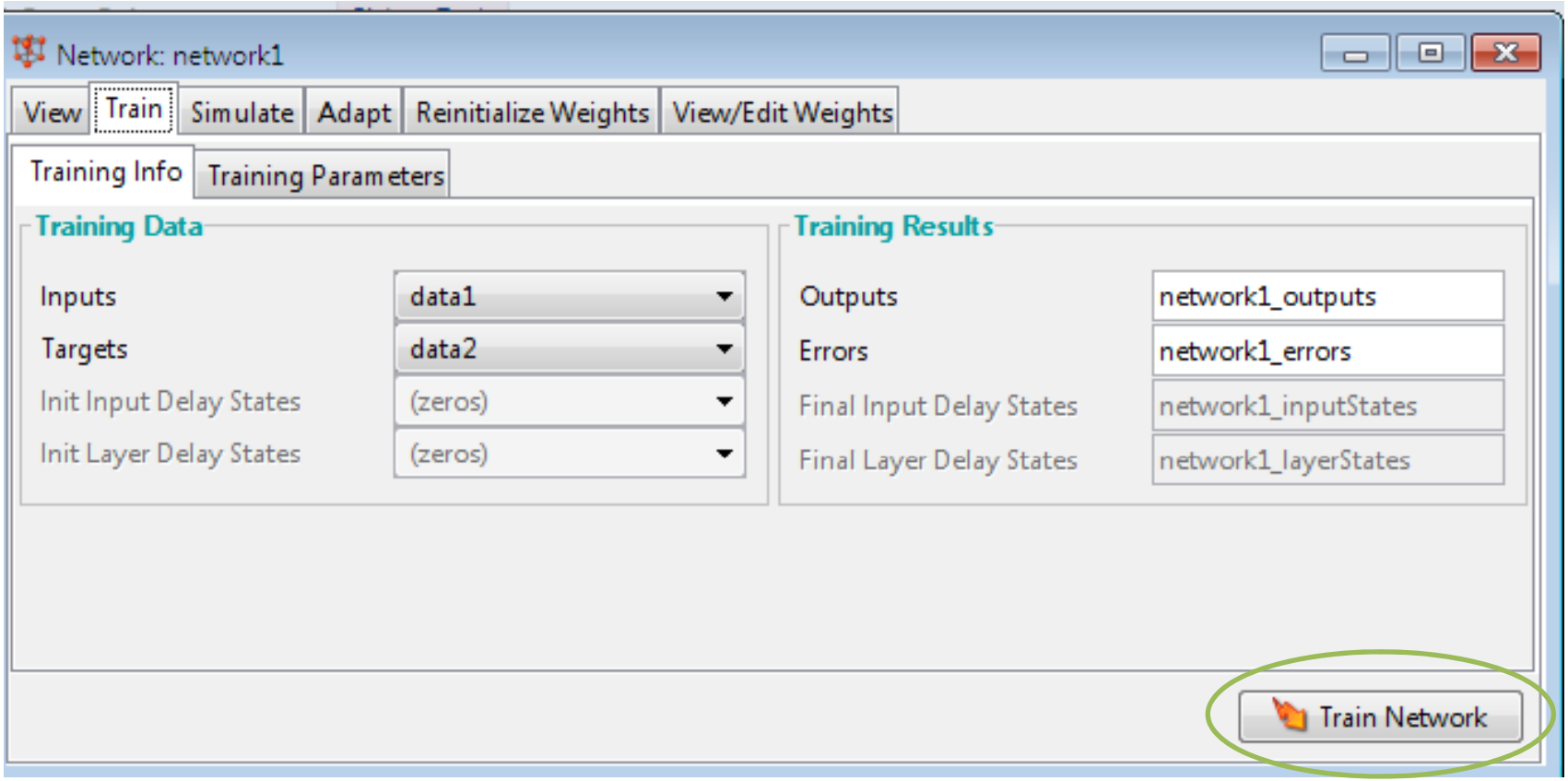
با انجام دستورات فوق شبکه با نام موردنظر در لیست Networks از منوی Network/data manager قرار می گیرد

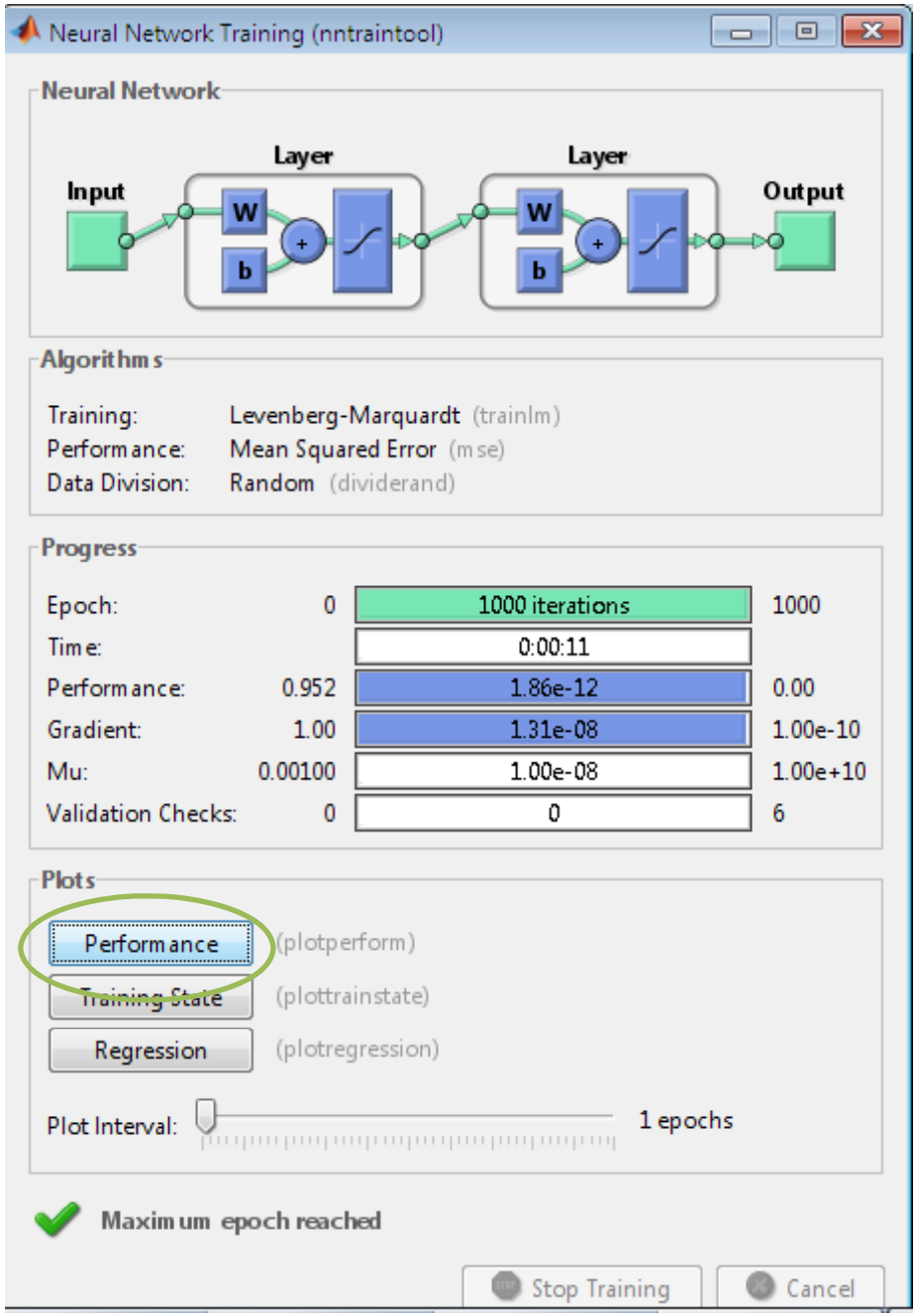


حال برای آموزش شبکه آن را از لیست فوق انتخاب نموده و گزینه open را انتخاب کنید منوی زیر ظاهر می شود

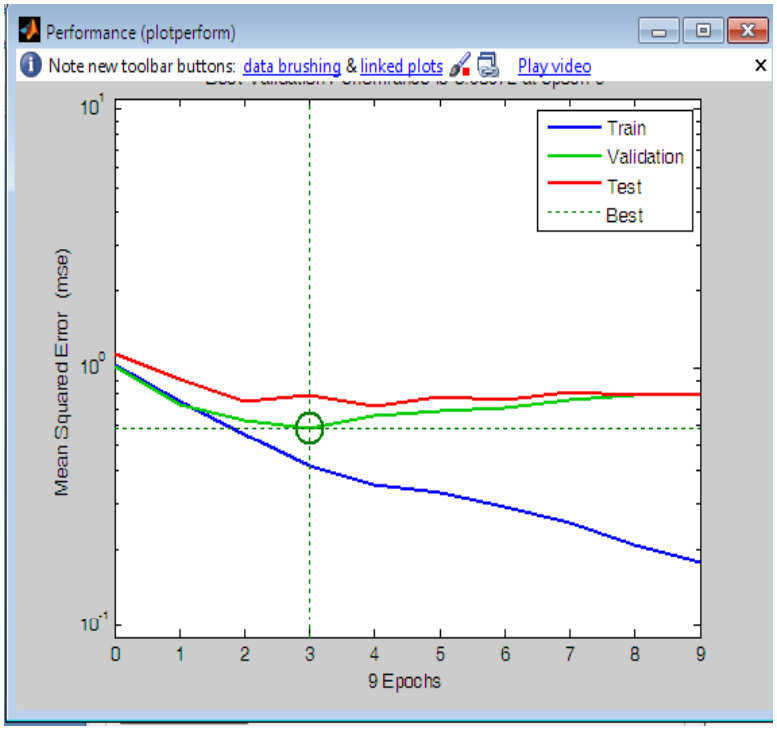


سپس با انتخاب زبانه Train متغیرهای ورودی و خروجی و سایر پارامترهای شبکه را تعیین نموده و گزینه Train networkرا انتخاب کنید.

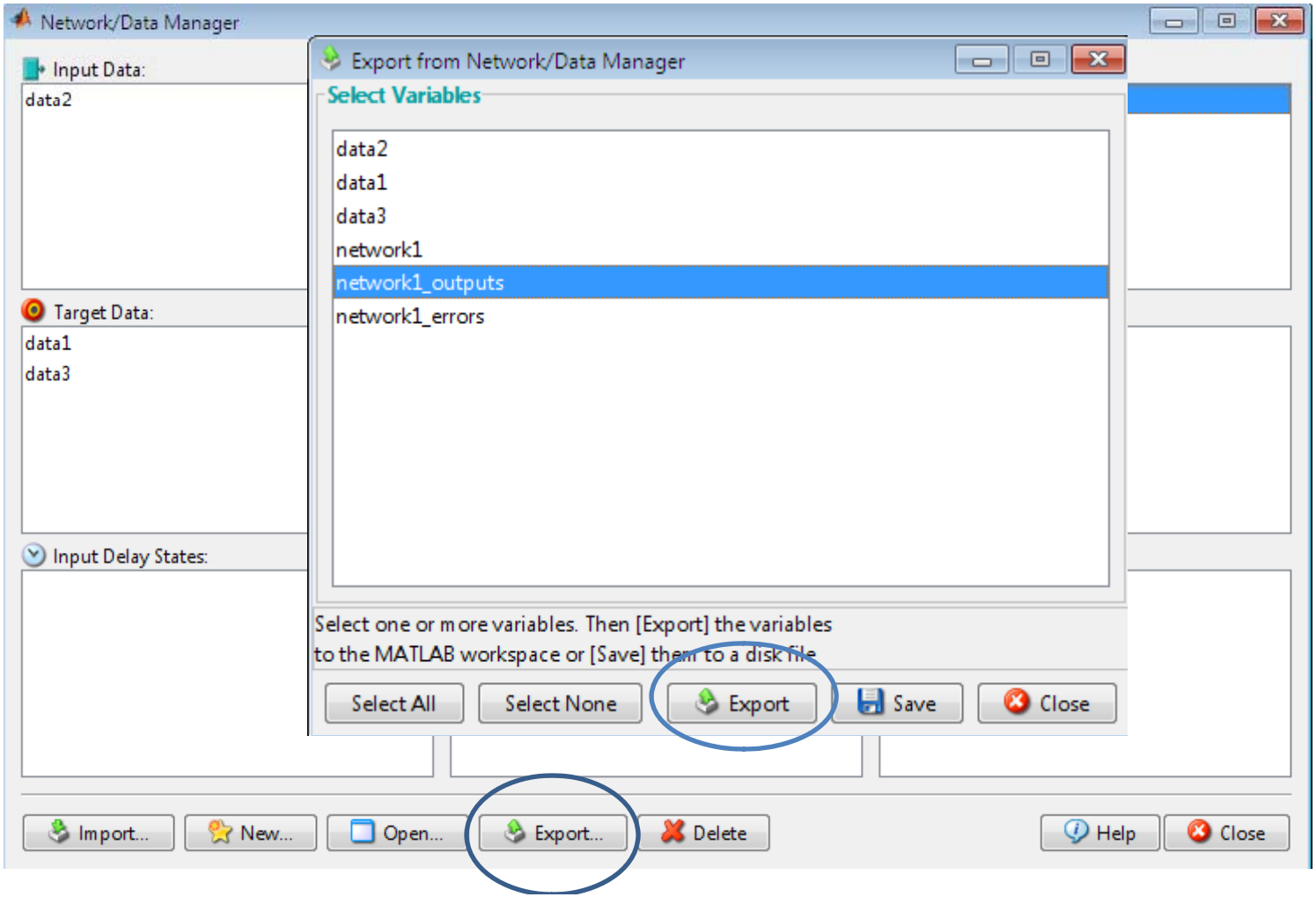


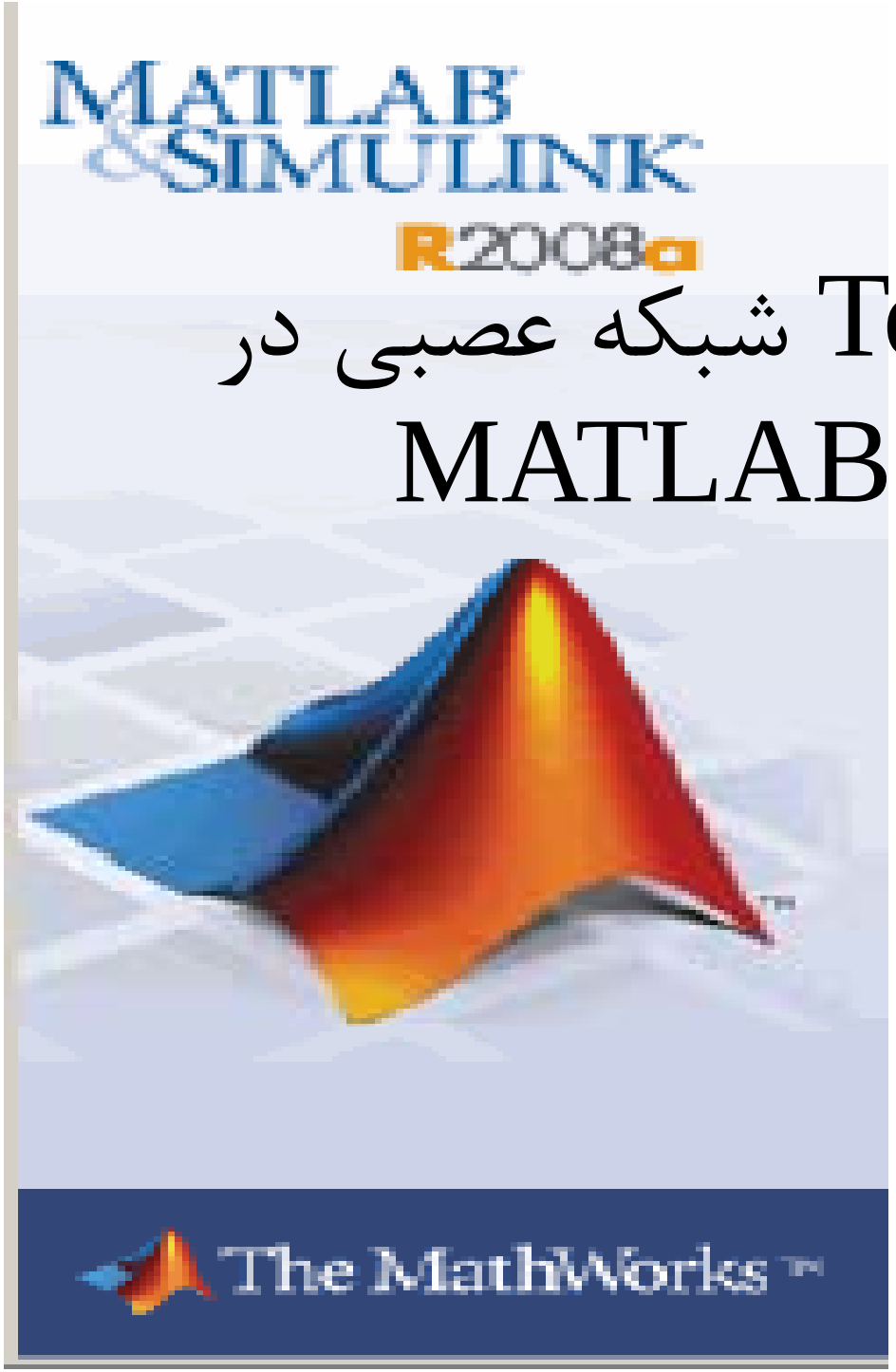


با انجام عملیات فوق شبکه آموزش می یابد و منوی زیر ظاهر می شود. برای دیدن مراحل آموزش شبکه گزینه Performanceرا انتخاب کنید

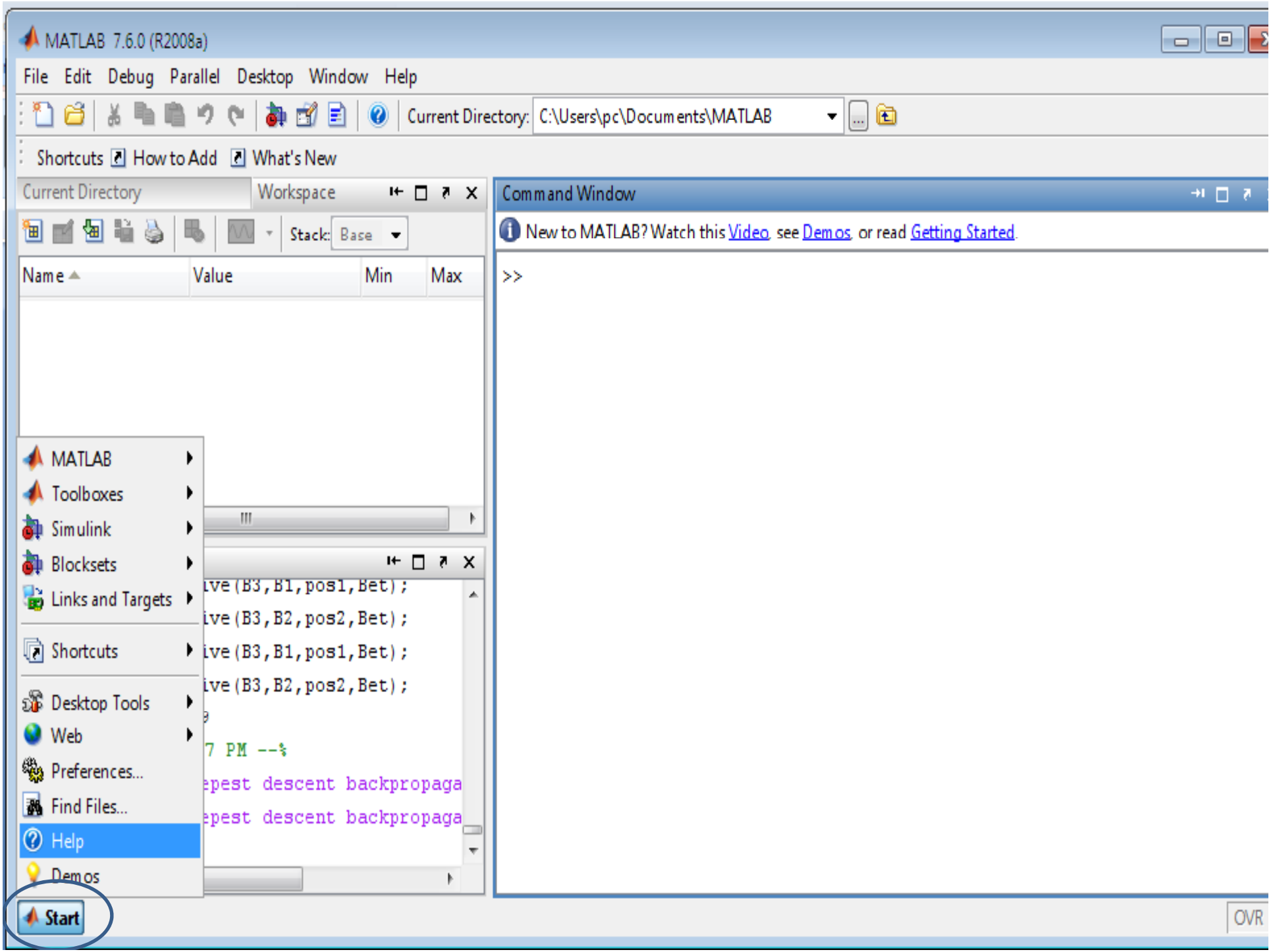


پس از آموزش شبکه برای انتقال متغیرها به محیط workspace در منوی Network/data manager با انتخاب متغیر و با استفاده از گزینه Export متغیر موردنظر را به workspace یا هر مکان دلخواهی دیگری می توان انتقال داد





استفاده از ToolboX شبکه عصبی در Help نرم افزار MATLAB


MATLAB 7.6.0 (R2008a)
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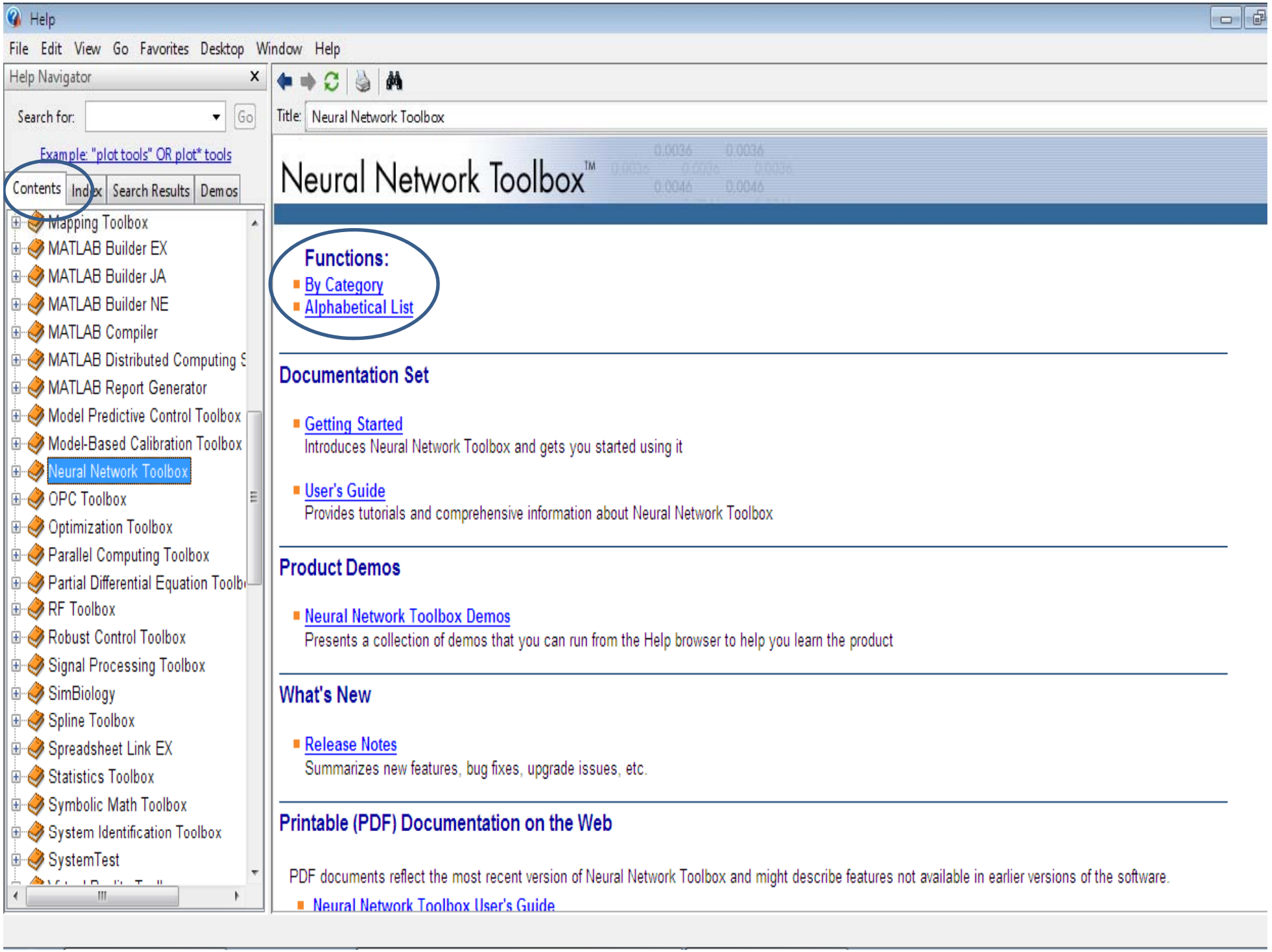
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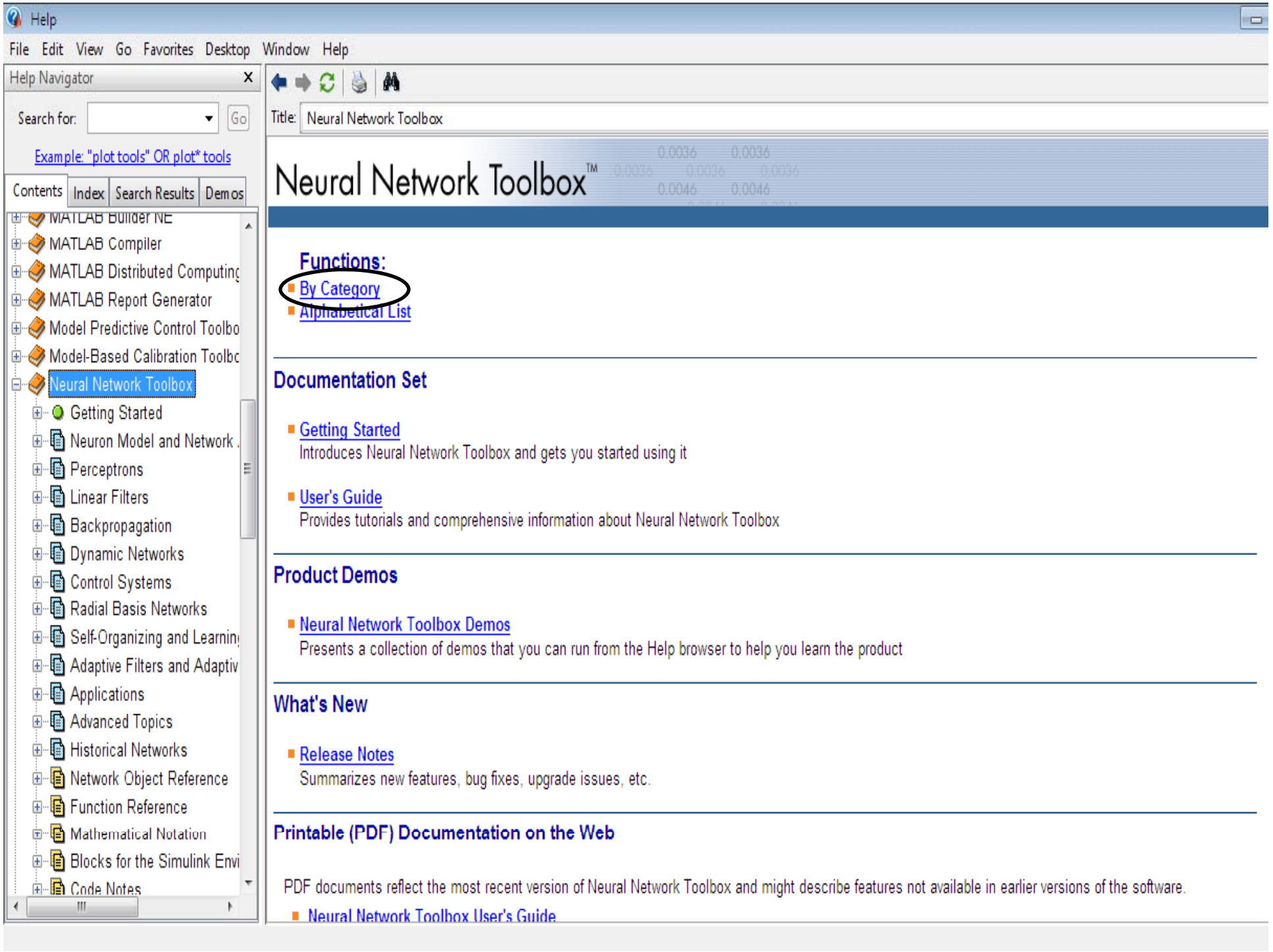
Presents a collection of demos that you can run from the Help browser to help you learn the product
What's New
Release Notes
Summarizes new features, bug fixes, upgrade issues, etc.
Printable (PDF) Documentation on the Web
PDF documents reflect the most recent version of Neural Network Toolbox and might describe features not available in earlier versions of the software.
Neural Network Toolbox User's Guide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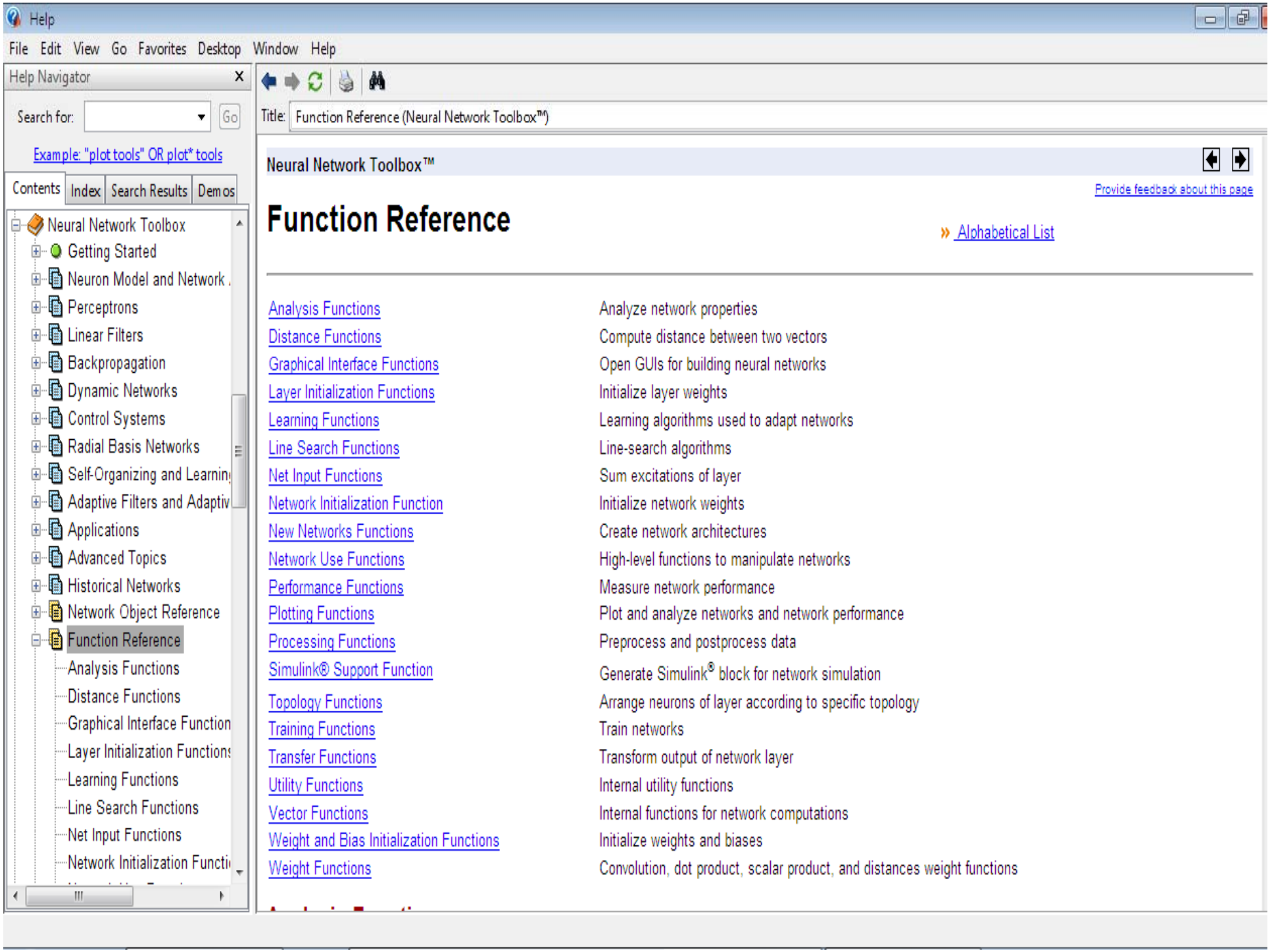
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Historical Networks
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Function Reference
Analysis Functions
Distance Functions
Graphical Interface Function
Layer Initialization Functions
Learning Functions
Line Search Functions
Net Input Functions
Network Initialization Functi
Title: Function Reference (Neural Network Toolbox™)
Neural Network Toolbox™
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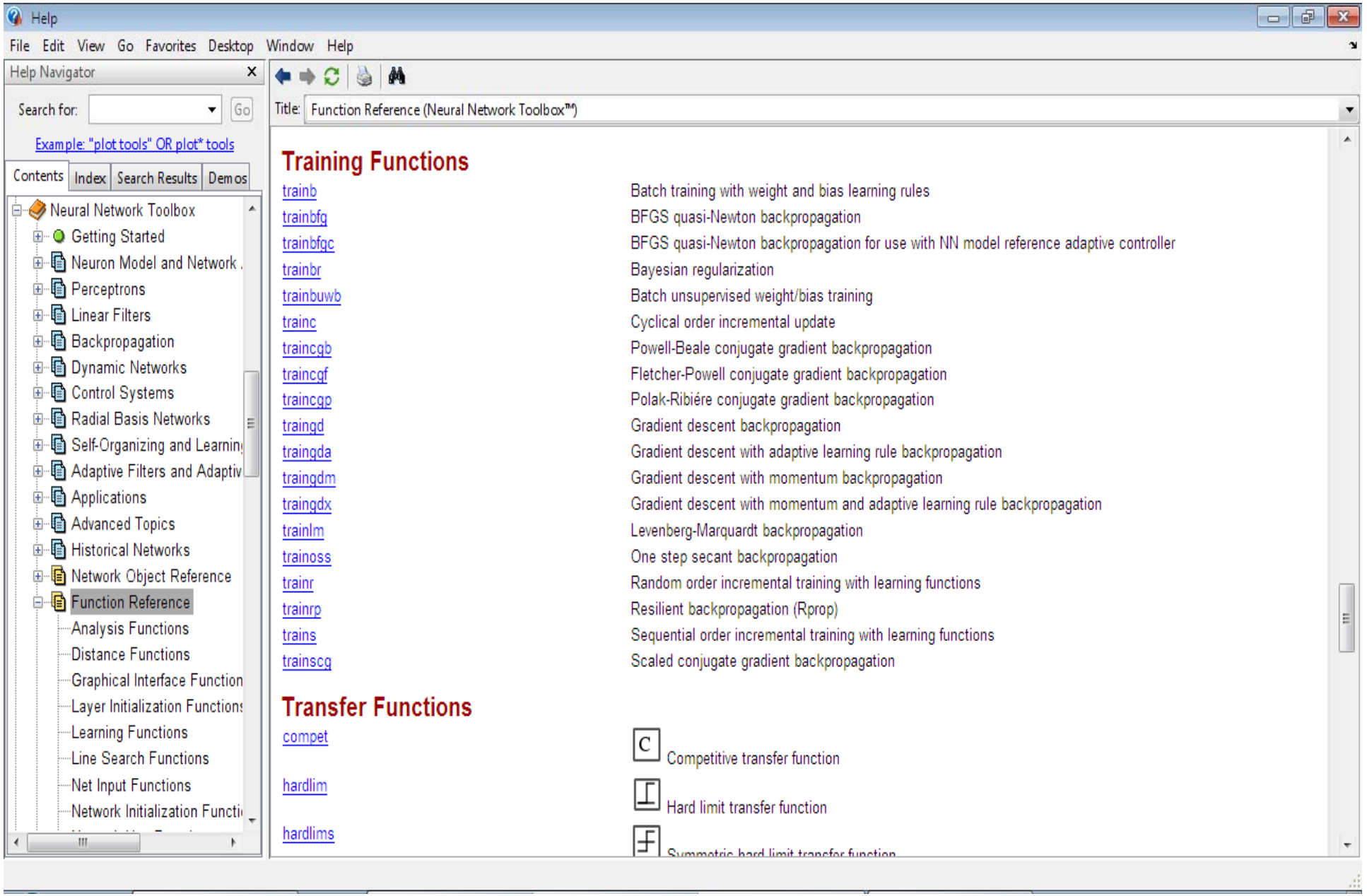
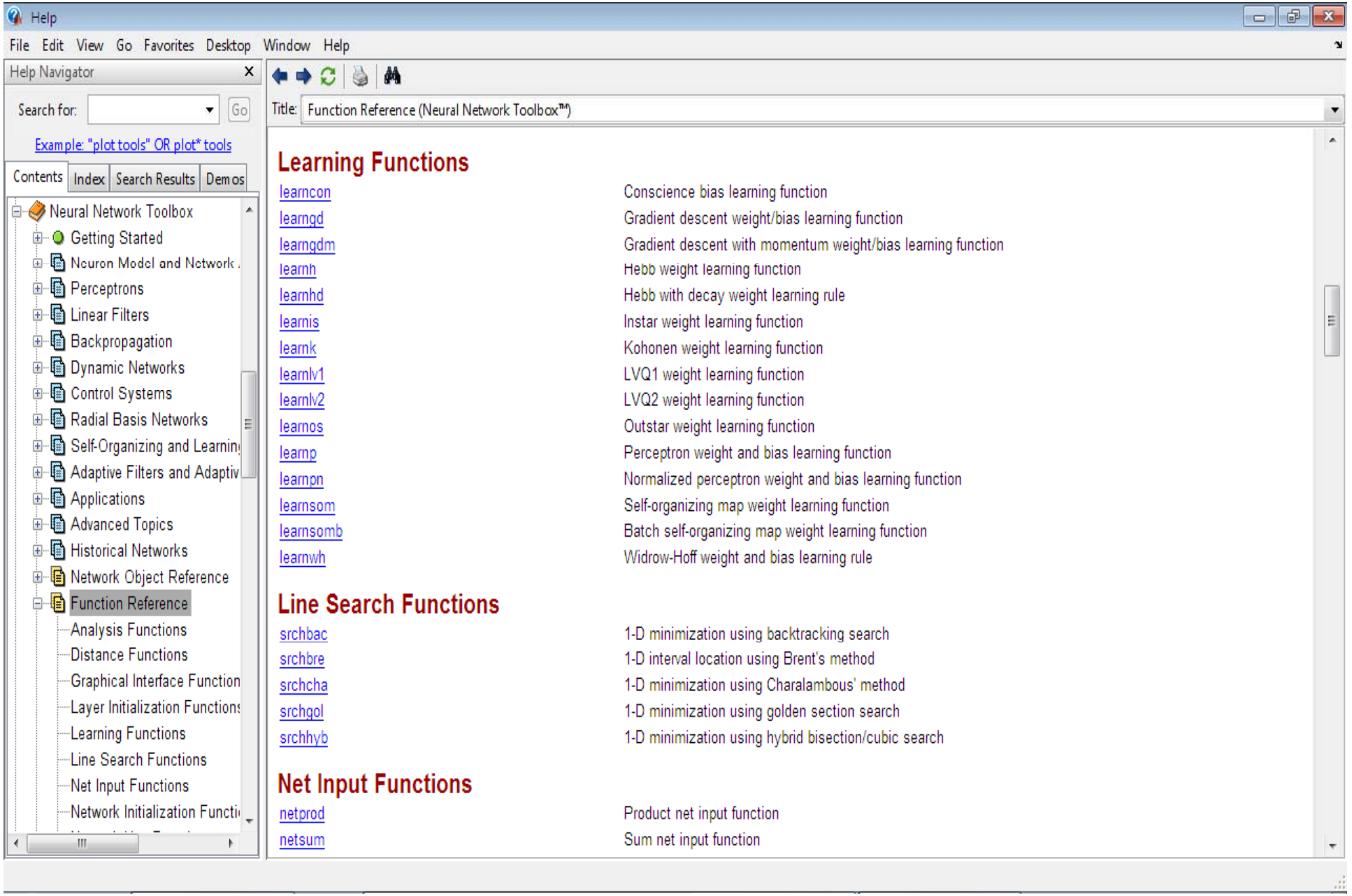
» Alphabetical List
Analysis Functions — Analyze network properties
Distance Functions — Compute distance between two vectors
Graphical Interface Functions — Open GUIs for building neural networks
Layer Initialization Functions — Initialize layer weights
Learning Functions — Learning algorithms used to adapt networks
Line Search Functions — Line-search algorithms
Net Input Functions — Sum excitations of layer
Network Initialization Function — Initialize network weights
New Networks Functions — Create network architectures
Network Use Functions — High-level functions to manipulate networks
Performance Functions — Measure network performance
Plotting Functions — Plot and analyze networks and network performance
Processing Functions — Preprocess and postprocess data
Simulink® Support Function — Generate Simulink® block for network simulation
Topology Functions — Arrange neurons of layer according to specific topology
Training Functions — Train networks
Transfer Functions — Transform output of network layer
Utility Functions — Internal utility functions
Vector Functions — Internal functions for network computations
Weight and Bias Initialization Functions — Initialize weights and biases
Weight Functions — Convolution, dot product, scalar product, and distances weight functions

انواع تابع آموزش



انواع تابع یادگیری



انواع تابع انتقال