

()

Archive of SID

,MatLab 6.0

NPH

,Error-back propagation

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// : // : // :

Archive of SID

NPH

MatLab 6.0

ii

i- Chaotic
ii- Interconnected

()

$/ \pm /$	$/ \pm /$	()
$/ \pm /$	$/ \pm /$	(kg/m ²)
$/ \pm /$	$/ \pm /$	()
\pm	\pm	(mg/dL)
\pm	\pm	()
$/ \pm /$	$/ \pm /$	()



- i- Training set
- ii- Error-back propagation
- iii- Convergence
- iv- Test dataset

References

1. Gale EA. The rise of childhood type 1 diabetes in the 20th century. *Diabetes* 2002; 51: 3353-61
2. McFarlane SI, Shin JJ, Rundek T, Bigger JT. Prevention of type 2 diabetes. *Curr Diab Rep* 2003; 3: 235-41.
3. Lebovitz HE. Therapy for diabetes mellitus and related disorders. 3rd edition. Alexandria VA: American Diabetes Association; 1998.
4. Weyer C, Bogardus C, Mott DM, Pratley RE. The natural history of insulin secretory dysfunction and insulin resistance in the pathogenesis of type 2 diabetes mellitus. *J Clin Invest* 1999; 104: 787-94.
5. Genuth S. Insulin use in NIDDM. *Diabetes Care* 1990; 13: 1240-64.
6. The Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. The Diabetes Control and Complications Trial Research Group. *N Engl J Med* 1993; 329: 977-86.
7. Ohkubo Y, Kishikawa H, Araki E, Miyata T, Isami S, Motoyoshi S, et al. Intensive insulin therapy prevents the progression of diabetic microvascular complications in Japanese patients with non-insulin-dependent diabetes mellitus: a randomized prospective 6-year study. *Diabetes Res Clin Pract* 1995; 28: 103-17.
8. Bolli GB, Di Marchi RD, Park GD, Pramming S, Koivisto VA. Insulin analogues and their potential in the management of diabetes mellitus. *Diabetologia* 1999; 42: 1151-67.
9. Powers AC. Diabetes mellitus. In: Braunwald E, Fauci AS, Kasper DL, Hauser SL, Longo DL, Jameson JL, editors. *Harrison's principles of internal medicine*. 15th edition. New York: McGraw Hill; 2001. p 2109-37.
10. Holt TA. A chaotic model for tight diabetes control. *Diabet Med* 2002; 19: 274-8.
11. Ambrosiadou BV, Gogou G, Maglaveras N, Pappas C. Decision support for insulin regime prescription based on a neural-network approach. *Med Inform (Lond)* 1996; 21: 23-34.
12. Mouggiakakou SG, Nikita KS. A neural network approach for insulin regime and dose adjustment in type 1 diabetes. *Diabetes Technol Ther* 2000; 2: 381-9.
13. Gogou G, Maglaveras N, Ambrosiadou BV, Goulis D, Pappas C. A neural network approach in diabetes management by insulin administration. *J Med Syst* 2001; 25: 119-31.