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FORECASTING OF NEW ISSUED BANKNOTES

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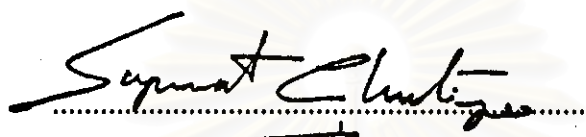
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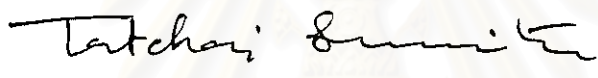
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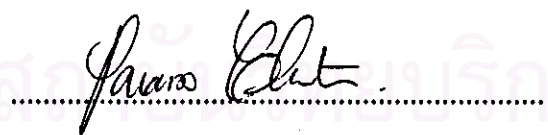
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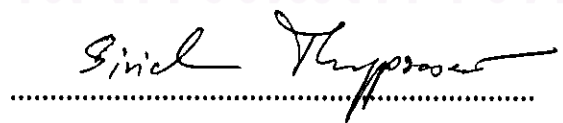

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พิมพ์ต้นฉบับบทความวิจัยวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

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วิทยานิพนธ์ฉบับนี้ได้นำเสนอเทคนิค Neural Network สำหรับการประมาณการธนบัตรออกใช้ใหม่โดยพิจารณาเทคนิค Widrow-Hoff และ Backpropagation สำหรับการประมาณการปี 1993-1996 โดยใช้ข้อมูลรายปีย้อนหลัง 12-15 ปีสำหรับการฝึกและทดสอบข้อมูล ผลการศึกษาพบว่าเทคนิค Backpropagation โดยมีพารามิเตอร์คือ อัตราการเรียนรู้ (10^{-1}) ข้อผิดพลาดที่ต้องการ (10^{-2} - 10^{-1}) และ sum-squared error ของข้อมูลที่ฝึก (9.30×10^{-4} - 3.26×10^{-3}) ให้ผลการประมาณการใกล้เคียงกับข้อมูลจริงมากที่สุด และเมื่อนำผลลัพธ์ไปเปรียบเทียบกับเทคนิค Regression ซึ่งเป็นวิธีการที่ธนาคารแห่งประเทศไทยใช้ในปัจจุบัน เทคนิคนี้มีความแม่นยำมากกว่าวิธีปัจจุบันอย่างเห็นได้ชัด

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ภาควิชา.....ศูนย์.....
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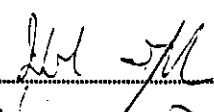


BUSAGARIN RURKHAMET: FORECASTING OF NEW ISSUED
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This study presents neural network techniques for forecasting the requirements of new issued banknotes. It employs Widrow-Hoff and backpropagation techniques to make the forecasts during 1993-1996 using the data in the preceding 12-15 years. It is found that the backpropagation technique provides the forecasting results closest to the actual figures with the following parameters: learning rates (10^{-1} to 1), error goals (10^{-2} to 10^{-1}), and sum-squared error of training data (9.30×10^{-4} to 3.26×10^{-3}). When compared to the regression technique being used at the Bank of Thailand, this technique gives significantly more accurate results.

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ปีการศึกษา ๒๕๔๐

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ลายมือชื่ออาจารย์ที่ปรึกษา 
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม 

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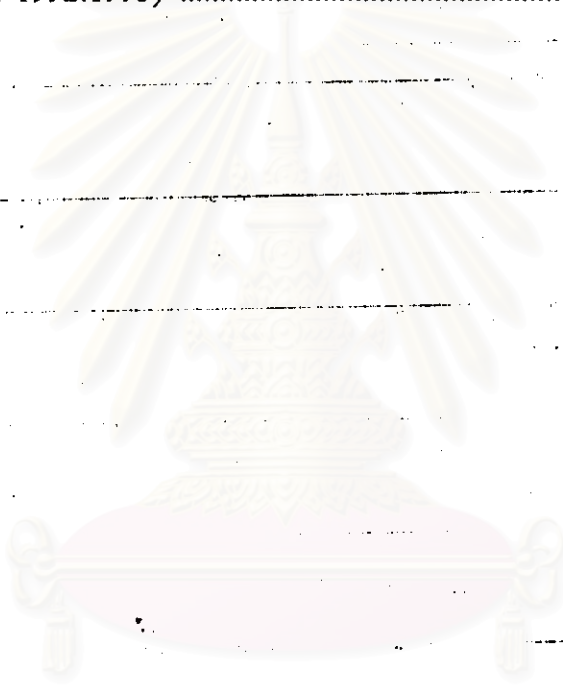
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ABBREVIATION

BOT	=	Bank Of Thailand
NN	=	Neural Network
PE	=	Processing Element
ART	=	Adaptive Resonance Theory
SSE	=	Sum-Squared Error



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