

--- On **Wed, 9/10/08**, **Sven F. Crone** <[sven.f.crone@crone.de](mailto:sven.f.crone@crone.de)> wrote:  
 From: Sven F. Crone <[sven.f.crone@crone.de](mailto:sven.f.crone@crone.de)>  
 Subject: NN5 Time Series Forecasting Competition - Corrected Results  
 To: "Sven F. Crone" <[sven.f.crone@crone.de](mailto:sven.f.crone@crone.de)>  
 Received: Wednesday, September 10, 2008, 12:41 AM



Dear NN5 contestants – all conference sessions of the 2008 time series forecasting competition for neural networks and methods of computational intelligence have now finished. We are therefore ready to finally release the results, which will also shortly be updated on the [NN5 website](http://www.neural-forecasting-competition.com/) (at <http://www.neural-forecasting-competition.com/>) where the datasets will also be released.

**Objectives**

The objective of the competition was to forecast a set of either 11 or 111 empirical time series of daily cash withdrawals at cash machines as accurately as possible, using methods from computational intelligence and a consistent methodology.

**Results**

Please excuse the earlier circulation of false errors & rankings on the reduced dataset – we have mistakenly copied parts of the same table twice. The results of the complete dataset remain unchanged – the results on the reduced dataset have been marginally altered. We have evaluated two sets of winners on the complete and the reduced dataset, with the best method applying neural networks or any other method of computational intelligence or machine learning on the complete dataset forming the official winner of the NN5 competition. In addition, we were pleased to evaluate various established and novel statistical benchmark methods for forecasting, that should equally be lauded for their performance. Last but not least we wish to congratulate all participants – forecasting a set of 111 time series represents a challenging endeavour!

The winner using computational intelligence on the complete dataset is the team of **Andrawis, Atiya & El-Shishiny (using A Combined Neural Network/Gaussian Process Regression Model)** followed by Vogel & Gottschalk (using A Principal Component Analysis Approach to Multiple Time Series Models with Ridge Regression and Neural Networks) and D'yakonov (using kNN-Method for Times Series Prediction with Median Simplification). Best statistical method takes the team of Wildi, who is also the best overall contender as in last year's NN3 competitions. Best statistical forecasting software – and the only software entry apparently capable of handling this data – was Autobox by Reilly.

COMPLETE DATASET		Mean SMAPE	Official Rank NN & CI Methods	Unofficial Ranks	
#ID	Contender Name			Stats. Methods	All Methods
B02	Wildi	19.9%		1	1
C23	Andrawis	20.4%	1		2
C12	Vogel	20.5%	2		3
C10	D'yakonov	20.6%	3		4
B08	Noncheva	21.1%		2	5
C06	Rauch	21.7%	4		6
C19	Luna	21.8%	5		7
B05	Lagoo	21.9%		3	8
C01	Wichard	22.1%	6		9
C17	Gao	22.3%	7		10
C08	Puma-Villanueva	23.7%	8		11
B01	Autobox (Reilly)	24.1%		4	12
B04	Lewicke	24.5%		5	13

B07	Brentnall	24.8%		6	14
C09	Dang	25.3%	9		15
C05	Pasero	25.3%	10		16
C24	Undisclosed	25.3%	11		17
C25	Undisclosed	26.8%	12		18
C20	Undisclosed	27.3%	13		19
C26	Undisclosed	28.1%	14		20
B12	Naïve Seasonal	28.8%		7	21
C14	Undisclosed	33.1%	15		22
C28	Undisclosed	36.3%	16		23
C22	Undisclosed	41.3%	17		24
C02	Undisclosed	45.4%	18		25
B11	Naïve Level	48.4%		8	26
C21	Undisclosed	53.5%	19		27

The order of the winners on the corrected results of the reduced dataset is slightly altered, although Wildi still outperforms all other CI & statistical contenders. The best CI approach is submitted by Rauch, followed by D'yakonov and Adrawis.

REDUCED DATASET		Mean SMAPE	Official Rank	Unofficial Ranks	
#ID	Contender Name		NN & CI Methods	Stats. Methods	All Methods
B02	Wildi	17.6%		1	1
C06	Rauch	19.0%	1		2
C10	D'yakonov	19.9%	2		3
C23	Adrawis	20.5%	3		4
B05	Lagoo	21.0%		2	5
C19	Luna	21.1%	4		6
C04	Hung	21.3%	5		7
B08	Noncheva	21.7%		3	8
C07	Gutierrez	21.9%	6		9
C01	Wichard	22.4%	7		10
C12	Vogel	22.4%	8		11
C08	Puma-Villanueva	23.1%	9		12
C17	Gao	23.2%	10		13
C05	Pasero	23.2%	11		14
B07	Brentnall	23.4%		4	15
B09	Merkusheva	23.8%		5	16
B01	Autobox (Reilly)	23.9%		6	17
B04	Lewicke	24.5%		7	18
C20	Teddy	24.7%	12		19
B03	Beadle	24.9%		8	20
C18	Fillon	25.4%	13		21
C09	Dang	25.4%	14		22
C25	Coyle	25.9%	15		23
B12	Naïve Seasonal	27.8%		9	24
C29	Undisclosed	28.2%	16		25
C24	Undisclosed	29.9%	17		26
C15	Undisclosed	30.2%	18		27
C16	Undisclosed	30.6%	19		28

C11	<i>Undisclosed</i>	31.5%	<b>20</b>		29
C26	<i>Undisclosed</i>	34.6%	<b>21</b>		30
C13	<i>Undisclosed</i>	34.7%	<b>22</b>		31
C14	<i>Undisclosed</i>	35.5%	<b>23</b>		32
C22	<i>Undisclosed</i>	37.6%	<b>24</b>		33
C03	<i>Undisclosed</i>	40.1%	<b>25</b>		34
C02	<i>Undisclosed</i>	40.2%	<b>26</b>		35
C28	<i>Undisclosed</i>	40.5%	<b>27</b>		36
C27	<i>Undisclosed</i>	47.4%	<b>28</b>		37
B11	Naïve Level	48.6%		10	38
C21	<i>Undisclosed</i>	50.3%	<b>29</b>		39

As in the last competition, we have only disclosed the names of the upper 50% of NN & CI entries – in order to see your name please contact the competition chair within the next 10 days and request the release of your name. Should you not wish to disclose your name you will be required to provide an anonymous description of your method to be published on the website. All results and descriptions will be disclosed on the website in approx. 10 days.

Again – we wish to congratulate all participants! If you have any questions or suggestions, please don't hesitate to contact us via email: [competition-chair@neural-forecasting-competition.com](mailto:competition-chair@neural-forecasting-competition.com)!

Also, please remember that ALL participants – regardless of their competition performance –are invited to submit papers to the special issue of the International Journal of Forecasting (IJF).

Sven F. Crone

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