

Dr. Van Belle Werner

Distributed, Embedded & Concurrent Systems Signal Processing, Mathematical Applications & Bioinformatics

Nationality	Belgian
Internet	http://werner.yellowcouch.org/
e-mail	werner@yellowcouch.org
Languages	Flemish, English, German
Programming	C, C++, C#, Matlab, PHP, Prolog, Pascal, Python, Scheme, Maple, Java
Tools & Libraries	Android, Linux, MySql, Qt, Apache2

Education

- Sep 2003 PhD in computer science at the University in Brussels (VUB, Belgium). The dissertation was titled *Creation of an Intelligent Concurrency Adaptor in order to mediate the Differences between Conflicting Concurrency Interfaces*.
- Jul 1997 Computer Science Degree, University Brussels (VUB, Belgium). The dissertation was titled *Design and Development of a Mobile Multi-Agent Architecture* and received highest honours.

Employment

- Mar. 15 →... **Independent JavaFx developer**
Porting BpmDj to JavaFx.
- Jan. 15 →Feb. 15 **Contractor Evolved Analytics**
Fast Function Extraction / Symbolic regression
- Nov. 12→ Dec. 13 **Independent Android Developer**
Development of BpmDj for Android.

Jul. 11 → Oct. 12

Signal Processing Des Pudels Kern / Audiotool

DSP Related

- IIR (butterworth, chebyshev 1-2, bessel) filters
- Linkwitz-Riley crossover
- Resampling using sinc interpolation/farrow filter coefficient interpolation
- DC offset removal
- Development of single band/multiband compressors, limiters
- Fixed rate and multirate filterbanks
- FIR filters, circular, non circular convolution using FFT
- Time pitch modifications in the time domain
- Sinusoidal modelling
- Matching equalizing using linear phase filters
- Hilbert filters
- Transient detection
- Exciter
- Stereo modeling using a head related transfer function

Synthesizer development

- Phase modulation kernel for an FM Synthesizer
- Fast computation of exponential envelopes
- Lo/hi shelving filter section
- Wavetable bandlimiting

Analysis related

- Tempo detection
- Rhythm detection
- Time signature analysis
- Spectral envelope measurement
- Music visualisation using beatgraphs, voiceprints, rhythm plots
- Nearest neighbor detection in music space

Android Development

Sep. 09 → Apr. 10

Dozent Duale Hochschule Baden-Württemberg

- 32 teaching hours Bioinformatics
- 20 teaching hours Informatik-II
- 18 teaching hours Mathematische Anwendungen
- 32 teaching hours Databases

Mär. 08 → Feb. 09

Senior research assistant ETH Zürich

- Analysis of siRNA Screens
- Analysis of data generated through sequencing by synthesis (Illumina)
- Setting up a data analysis pipeline for the deep sequencing platform
- Data mining epigenetic datasets
- Tool development for analysis of deep sequencing data
- Project guidance for a computer science course

Mär 07 → Dez. 07

Data analysis

University Hospital of Northern Norway

- Statistical Analysis of Realtime/Quantitative PCR experiments
- Image & Statistical analysis of filmed transgenic mice
- Prediction of relevant genes/proteins through analysis of protein interaction maps

Apr. 04 → Mär 07

Researcher NORUT IT

- Project acquisition
- Image & Statistical Analysis of 2D Electrophoretic Gel images
- Denoising of Mass Spectrometric Data (MALDI-TOF & TOF/TOF)
- Investigating ship-to-shore protocols
- Jurymember 'Open Source Awards' CETRIL 2006

Jan. 06 → Dez. 06
Mär 04 → Apr. 04

Postdoctoral Researcher

University of Tromsø, Computer Science & Virology Department
- paper writing
- website generation
- analysis of microarrays

Feb. 99 → Sep. 03
Mär 98 → Dez. 98
Okt. 97 → Dez. 97

Researcher, Teaching Assistant

University Brussels, Computer Science Department
- cooperation with with *Rijks Universiteit Gent, Katholieke Universiteit Leuven, Limburgs Universitair Centrum, Siemens, Barco-Graphics, Agfa Gevaert, Imec, Philips and Alcatel*
- development of distributed programming languages
- project acquisition
- Exercises Distributed Systems, Concurrent Systems, Theory of database systems, Graphics and Algorithms and Data Structures
- Advisor for for 16 Masterstudents, co-advisor for 2 PhD Students

Jan 98 → Feb. 98

Software engineer MediaGeniX

- Investigating Long Running Transactions & Java Based Printing

Dissemination

Below a small selection of articles I wrote. For a full list of publications, presentations, deliverables etc, please visit <http://werner.yellowcouch.org/Papers/>. * is a corresponding author. † are equal contributors.

Publications

1. Werner Van Belle*; *Zathras-1: time stretching audio through matrix-multiplication*; Audio Processing; Yellow-Couch; Editor(s) ; volume ; November 2015
2. Nina Ånensen, Werner Van Belle, S.M. Hjelle, Ingvild Haaland, E Silden, Jean-Christophe Bourdon, R Hovland, K Taskén, S Knappskog, P.E. Lønning, Oystein Bruserud, Bjørn Tore Gjertsen; *Correlation analysis of p53 protein isoforms with NPM1/FLT3 mutations and therapy response in acute myeloid leukemia*; Correlation analysis of p53 protein isoforms with NPM1/FLT3 mutations and therapy response in acute myeloid leukemia; Nature Oncogene; volume 31; pages 1533-1545; March 2012
3. Abil Saj, Zeynep Arziman†, Denise Stempfle†, Werner Van Belle, Ursula Sauder, Thomas Horn, Markus Dürrenberger, Renato Paro, Michael Boutros, Gunter Merde*; *A Combined Ex Vivo and In Vivo RNAi Screen for Notch Regulators in Drosophila Reveals an Extensive Notch Interaction Network*; Developmental Cell; Elsevier; volume 18; pages 862-876; May 2010
4. Line Sæther*, Werner Van Belle, Bruno Laeng, Tim Brennen, Øvervoll Morten; *Anchoring gaze when categorizing faces sex: Evidence from eye-tracking data*; Vision Research; Elsevier; Editor(s) Christopher W. Tyler; volume 49; nr 23; pages 2870-2880; August 2009
5. Piotr J. Balwierz, Piero Carninci, Carsten Daub, Jun Kawai, Werner Van Belle, Christian Beisel, Erik Van Nimwegen*; *Methods for analyzing deep sequencing expression data: constructing the human and mouse promoterome with deepCAGE data.*; Genome Biology; Biomed Central; volume 10; nr 7; pages R79; July 2009
6. Nancy Gerits*, Werner Van Belle, Ugo Moens; *Transgenic mice expressing constitutive active MAPKAPK5 display gender-dependent differences in exploration and activity*; Behavioral and Brain Functions; Biomed Central; Editor(s) Terje Sagvolden; volume 3; nr 58; November 2007
7. Werner Van Belle*, Nancy Gerits, Kirsti Jakobsen, Vigdis Brox, Marijke Van Ghelue, Ugo Moens; *Confidence Intervals on Microarray Measurement of Differentially Expressed Genes: A Case Study on the effects of MK5, TAF4 and FKRP on the transcriptome*; Gene Regulation and Systems Biology; Libertas Academus Press; nr 1; pages 57-72; May 2007
8. Werner Van Belle*†, Jessie Dedecker†; *Ambient Actors as a Formalism for Ubiquitous and Mobile Computing*; Handbook for Ubiquitous and Mobile Computing; American Scientific Publishers; October 2006
9. Werner Van Belle*; *Dj-ing under Linux with Bpmdj*; Linux+ Magazine; nr 25; October 2006
10. Werner Van Belle*, Gry Sjøholt, Nina Ånensen, Kjell-Arild Høgda, Bjørn Tore Gjertsen; *Adaptive contrast enhancement of two-dimensional electrophoretic protein gel images facilitates visualization, orientation and alignment*; Electrophoresis; Wiley Interscience Vch; volume 27; nr 20; pages 4086-4095; October 2006

11. Nina Ånensen, Ingvild Haaland, Clive D'Santos, Werner Van Belle, Bjørn Tore Gjertsen*; *Proteomics of p53 in Diagnostics and Therapy of Acute Myeloid Leukemia*; Current Pharmaceutical Biotechnology; Bentham Science Publishers Ltd.; volume 7; nr 3; July 2006
12. Werner Van Belle*, Nina Ånensen, Ingvild Haaland, Oystein Bruserud, Kjell-Arild Høgda, Bjørn Tore Gjertsen; *Correlation analysis of two-dimensional gel electrophoretic protein patterns and biological variables*; BMC Bioinformatics; volume 7; nr 198; April 2006
13. Werner Van Belle*, Bjørn Tore Gjertsen, Rebecca Katherine; *Method and Apparatus for Correlation Analysis of Electrophoretic Protein Patterns*; Submitted as a patent application; Editor(s) Frank B. Dehn; April 2006
14. Werner Van Belle*, Olav Mjaavatten; *Artefacts in the Mass Spectra Output from MALDI-TOF and MALDI-TOF/TOF Machines*; Proceeding of the VIIth International Symposium of the Protein Society section proteomics, interactomics and protein networks; April 2005
15. Jessie Dedecker[†], Werner Van Belle[†]; *Actors for Mobile Ad-Hoc Networks (The Ambient Actor Model)*; Proceedings of Embedded and Ubiquitous Computing (EUC2004); Springer Verlag; Lecture Notes in Computer Science (LNCS 3207); Editor(s) Aizu-Wakamatsu; pages 482-494; August 2004
16. Jessie Dedecker*, Werner Van Belle, Wolfgang De Meuter; *Actors for Pervasive Computing*; Proceeding of the workshop on reference architectures and patterns for pervasive computing (OOPSLA2003); June 2003
17. Werner Van Belle*, Tom Mens, Theo D'Hondt; *Using Genetic Programming to Generate Protocol Adaptors for Interprocess Communication*; Evolvable Systems: From Biology to Hardware, Proceedings of the 5th Intl. Conference on Evolvable Systems (ICES2003); Springer Verlag; Lecture Notes in Computer Science (LNCS 2606); Editor(s) Andy M. Tyrrel and Pauline C. Haddow and Jim Torresen; pages 422-433; March 2003
18. Werner Van Belle*, Karsten Verelst, Kristof Van Buggenhout, Theo D'Hondt; *Is Message Sending Good enough for Distributed Systems? Communication and synchronisation revisited*; Accepted for publication in the proceedings of the Distributed Object Workshop at the European Conference on Object Oriented Programming 2001 (ECOOP 2001); June 2001
19. Werner Van Belle*, Johan Fabry, Karsten Verelst, Theo D'Hondt; *Experiences in Mobile Computing: The CBorg Mobile Multi-Agent System*; Technology of Object-Oriented Languages and Systems (TOOLS 38): Components for Mobile Computing; IEEE Computer Society Press; Los Alamitos, California; Editor(s) Wolfgang Pree; pages 7-18; March 2001
20. Werner Van Belle*, Karsten Verelst, Theo D'Hondt; *The CBorg Mobile Multi-Agent System*; Edited Volume on Infrastructures for Large-Scale Multi-Agent Systems; ACM; October 2000
21. Stefan Van Baelen*, David Urting, Werner Van Belle, Viviane Jonckers, Tom Holvoet, Yolande Berbers, Karel De Vlamincq; *Towards a unified terminology for component-based development*; Submitted to ECOOP 2000; June 2000
22. Werner Van Belle*, Theo D'Hondt; *Agent mobility and Reification of Computational State*; International Proceedings of Infrastructures for Agents, Multi-Agent Systems and Scalable Multi-Agent Systems; Springer Verlag; Lecture Notes in Artificial Intelligence (LNAI 1887); Editor(s) Tom Wagner and Omer Rana; pages 166-173; June 2000
23. Werner Van Belle*, Karsten Verelst, Theo D'Hondt; *Location Transparent Routing in Mobile Agent Systems - Merging Name Lookups with Routing*; 7th IEEE Workshop on Future Trends of Distributed Computing Systems; IEEE Computer Society Press; Los Alamitos, California; Editor(s) A. Denise Williams; pages 207-212; December 1999
24. Wolfgang De Meuter*, Kris De Volder, Werner Van Belle, Tom Tourwe, Theo D'Hondt; *Prototype Based agents for the Web*; Proceedings of the European Conference on Object Oriented Programming 1997 (ECOOP 1997), workshop on Prototype-Based Object-Oriented Programming; September 1997

Other Articles

1. Werner Van Belle; *FlowDb - getting rid of SQL*; YellowCouch; August 2014
2. Werner Van Belle; *Training a Distance Metric*; YellowCouch; June 2014
3. Werner Van Belle; *Two Solutions to Harmonics due to short Envelope Fades.*; Audio Processing; YellowCouch; January 2014
4. Werner Van Belle; *Estimating the phase of a subbin sine from a local group of frequencies.*; Audio Processing; YellowCouch; January 2014
5. Werner Van Belle; *Fast Tempo Measurement: a 6000x sped-up autodifferencer.*; Signal Processing; YellowCouch; July 2011
6. Werner Van Belle; *Bitslicing: Nearest Neighbors with <30% Data Access for 1000+ Dimensional Uniform Spaces*; Computer Science; YellowCouch; June 2011

7. Werner Van Belle; *Classification of Rhythmical Patterns*; Signal Processing; YellowCouch; September 2010
8. Werner Van Belle; *Rhythm Pattern Extraction*; Signal Processing; YellowCouch; August 2010
9. Werner Van Belle; *Biasremoval from BPM Counters and an argument for the use of Measures per Minute instead of Beats per Minute*; Signal Processing; YellowCouch; July 2010
10. Werner Van Belle; *Active Objects: an Efficient Space/Time Separation of Concurrent Tasks through Active Message Queues*; Computer Science; YellowCouch; February 2010
11. Werner Van Belle; *FlowPipes: Isolating and Rejoining Data Tokens in the context of Data Analysis Pipelines*; Bioinformatics; YellowCouch; December 2009
12. Werner Van Belle*; *Pattern Analysis of Human Histone Methylations and Acetylations through Cross Correlation Maps*; Bioinformatics; YellowCouch; February 2009
13. Werner Van Belle*, Nancy Gerits, Ugo Moens; *Propagating Differential Gene Expression in Protein Interaction Networks*; Bioinformatics; YellowCouch; February 2008
14. Werner Van Belle*; *An Adaptive Filter for the Correct Localization of Subimages: FFT based Subimage Localization Requires Image Normalization to work properly*; Signal Processing; Yellowcouch; 11 pages; October 2007
15. Werner Van Belle*; *Correlation between the inproduct and the sum of absolute differences is -0.8485 for uniform sampled signals on [-1:1]*; Signal Processing; YellowCouch Scientific; November 2006
16. Werner Van Belle*; *Antenna Finding and Interpolation/Extrapolation of Signal Strength*; November 2006
17. Werner Van Belle*; *Observations on spectrum and spectrum histograms in BpmDj*; September 2005
18. Werner Van Belle*; *The Failure of the Connectionless Model and the Vice Software Model*; February 2004
19. Karsten Verelst*, Werner Van Belle, Theo D'Hondt; *The Reflective Virtual Machine*; June 2001
20. Werner Van Belle*; *BPM Measurement of Digital Audio by Means of Beat Graphs & Ray Shooting*; December 2000
21. Karsten Verelst*, Werner Van Belle, Theo D'Hondt; *Communication & Synchronization in Mobile Multi-Agent Systems, CSP Revisited*; Submitted to workshop 23 at ECOOP 2000; March 2000
22. Werner Van Belle*; *Reinforcement Learning as a Routing Technique for Mobile Multi Agent Systems*; January 1998