

Dominique Georges Bérroule, Researcher at CNRS

## Personal Details

*Year of birth*                1959  
*Nationality*                French

## Academic Qualification

1981                MSc in Telecommunication Sciences, University of Villetaneuse.  
1982                DEA in Computer Science, University of Orsay.  
1985                PhD in Electronics (Computer Science), University of Orsay.

## Professional experience

1987                Research fellowship at the Instituut vor Perceptie Onderzoek (IPO), Eindhoven, Netherlands.  
1997                Research fellowship at SEDAL, University of Sydney, Australia.

## Teaching

1989 -1994        Lecturer in "Psychophysiological models and connectionist systems", DEA of Cognitive Science, University of Orsay.

## Research management

1988 -1991        Member of the Board of the "Institut des Sciences Cognitives et de la Communication", Orsay.  
1989 -1992        Member of the LIMSI laboratory board.  
1990 -1993        Member of the recruitment advisory committee of the Orsay University.  
1988 -1993        Head of the "connectionist systems" theme in the LIMSI "Speech Group".  
1992                Coordinator of the Organizing Committee of the 6th "Neurosciences et Sciences de l'Ingénieur" Workshop, May 25-28, Oléron, France.  
1993                Member of the Organizing Committee of the NATO Advanced Study Institute "Basics of Man-Machine Communication for the Design of Educational Systems", August 16-26, Eindhoven, The Netherlands.  
1993 -1996        Member of the Steering Committee of the "Sphere" Human Capital and Mobility project.  
1988 -1996        Scientific Advisor of nine PhD Theses, among which five led to Research/Teaching positions.

## Industrial valorization

1996-2000        Founder and Scientific Advisor of "SensorIA Technology", start-up specialized in "Knowledge Management". The early Search Engine designed by this company for Intranet (i.e. used in 1998 by the "01-Informatique" French magazine) could deal with misspelled keywords and included a semantic network for enlarging the search and ranking the returned pages (1997). It was presented in the Silicon Valley (California) for being possibly funded, some months before Google started up.

## Other activities

2004-2007        Initiator and coordinator of the JIGMOD (Joint International GMO Opposition Day)  
2008-2010        Initiator and coordinator of the AlterTour "for a doping-free planet"

## Publications

- Béroule, D. (1983), "Vocal Interface for a Man-Machine Dialogue", Proceedings of the 1<sup>st</sup> meeting of the Association for Computational Linguistics, Pisa, September 1-2.
- Béroule, D., Néel, F. (1983) "Une approche des problèmes liés à la Communication Parlée Homme-Machine", 4th AFCET-INRIA Conference, Paris, January 25-27.
- Béroule, D. (1984) "Organisation d'un Système de Gestion du Dialogue Oral Homme-Machine", XIII<sup>es</sup> Journées d'Etude sur la Parole GALF, Bruxelles, May 20-30.
- Béroule, D. (1984) "Un modèle d'accès au lexique en reconnaissance de la parole", proceedings of the Soviet-French Workshop, Moscow, September.
- Néel, F., Béroule, D. (1985) "Vers un dialogue oral homme-machine", Education et Informatique n°24, February.
- Béroule, D. (1985) "ADAM: an Adaptive, Dynamic and Associative Memory model", proceedings of the Swedish-French Workshop, Grenoble, April.
- Béroule, D. (1985), "A model of dynamic, associative, distributed and adaptive memory" (in French), AFCET conf: "Hardware and software components and architectures for the 5th generation", 5-7 March, Paris, pp. 201-211.
- Béroule, D. (1985) "Un Modèle de Mémoire Adaptative, Dynamique et Associative pour le Traitement Automatique de la Parole", PhD thesis, May, Orsay.
- Béroule, D. (1985) "Une Stratégie auto-adaptative de compréhension de la parole", XIV<sup>èmes</sup> Journées d'Etude sur la Parole, Paris, June.
- Béroule, D. (1986) "Un Modèle de Mémoire Adaptative, Dynamique et Associative", 4<sup>èmes</sup> Journées Neurosciences et Sciences de l'Ingénieur, Marseille-Lumigny, May.
- Schwartz, J.-L., Béroule, D. (1986) "Essai de formalisation de faits et hypothèses de physiologie concernant le traitement de l'information pour la reconnaissance automatique de la parole", XV<sup>èmes</sup> Journées d'Etude sur la Parole, Aix-en-Provence, May.
- Béroule, D. (1987) "Guided Propagation inside a Topographic Memory", Proceeds. 1<sup>st</sup> Int. Conf. on Neural Networks, San Diego, Vol. IV, pp. 469-476.
- Leboeuf, J., Béroule, D. (1987) "Processing of Noisy Patterns with a connectionist system using a topographic representation of speech", Proceeds. European Conference on Speech Technologies, Edinburgh.
- Béroule, D. (1988) "The Never-ending Learning", in: Neural Computers, R.Eckmiller, C.v.d.Malsburg (Eds), Springer-Verlag, pp. 219-230.
- Béroule, D. (1988) "Un scénario d'enseignement-fiction", Journal des Instituteurs (JDI), N°3, november, Nathan.
- Béroule, D.G. (1989) "Management of Time Distortions through Rough Coincidence Detection", Proceed. of the 1st European Conference on Speech Communication and Technology, Paris.
- Béroule, D. (1989) "The adaptive, Dynamic and Associative Memory Model: a possible future tool for vocal Human-Computer Communication", The Structure of Multi-modal Dialogue, M.Taylor, D.G.Bouwhuis, F.Néel (Eds), North-Holland, pp. 189-202.
- Béroule, D.G. (1990) "Guided Propagation: Current State of Theory and Applications", in Neurocomputing: Algorithms, Architectures and Applications, F.Fogelman, J.Herault (Eds), Springer-Verlag, pp. 241-260.
- Béroule, D. (1990) "La dimension Temporelle dans les Systèmes Connexionnistes", Intellectica, N°9-10, pp. 299-305.
- Roques, M., Béroule, D. (1990) "Traitement parallèle de séquences lexicales par propagation guidée", 5<sup>èmes</sup> Journées Neurosciences et Sciences de l'Ingénieur, Aussois, 7-10 Mai.
- Béroule, D. (1990) "A propos de la dimension spatiale et de la dimension temporelle dans le support des représentations", 5<sup>èmes</sup> Journées Neurosciences et Sciences de l'Ingénieur, Aussois, 7-10 Mai.
- Roques, M., Béroule, D. (1991) "Strategies of unsupervised learning for a parallel parsing architecture", International Joint Conference on Neural Networks, Seattle, Vol. II, pp. 215-218
- Béroule, D. (1991) "Traitement Connexionniste du Langage", in: Histoire, Epistémologie et Langage, tome 11, fascicule 1: Sciences du langage et recherches cognitives, F.Rastier (Ed).
- Escande, P., Béroule, D., Blanchet, P. (1992) "Speech Recognition Experiments with Guided Propagation", International Joint Conference on Neural Networks, Singapore.
- Martin, J.C., Béroule, D. (1992) "Vers un contrôle intégré à un système de dialogue multi-modal d'inspiration neurobiologique", Proceeds. 6<sup>èmes</sup> Journées Neurosciences et Sciences de l'Ingénieur, 25-28 mai, Oléron.
- Martin, J.-C., Béroule, D. (1992) "Eléments de modélisation connexionniste pour l'interaction homme-machine multimodale". Actes des quatrième journées sur l'ingénierie des Interfaces Homme-Machine (IHM'92), 30 sept., 2 déc., Paris, pp. 43-48.

- Béroule, D. (1992), space-time topological representations for Human-Machine Communication, LIMSI report n°92-17 (in French)
- Martin, J.-C., Béroule, D. (1993), "Symbolic variable manipulations in a connectionist model using multiplexed oscillations and synchrony". Proceeds of the workshop "Temporal Coding in the Brain", Fondation IPSEN, 11 octobre, Paris.
- Martin, J.-C., Béroule, D. (1993) "Types et buts de coopération entre modalités", Actes des cinquièmes journées sur l'ingénierie des Interfaces Homme-Machine (IHM'93), 19-20 octobre, Lyon, pp. 17-22.
- Béroule, D. (1993) "Vers un Connexionnisme Cognitiviste ?", in Modèles et Concepts pour la Science Cognitive, M.Denis, G.Sabah (Eds.), Presses Universitaires de Grenoble, pp. 109-124.
- Martin, J.-C., Béroule, D. (1993) "Trends in Human-Machine Multi-modal Interaction", Non-Visual Human-Computer Interactions, D.Burger, J.-C.Sperandio (Eds), INSERM/John Libbey Eurotext Ltd, vol. 228, pp. 145-166.
- Nioche, C., Béroule, D. (1994) "Vers une modélisation fonctionnelle de la neuromodulation par Réseaux à Propagation Guidée", Proceeds. 7èmes Journées Neurosciences et Sciences de l'Ingénieur, May 2-5, pp. 231-234.
- Lainé, A., Béroule, D. (1994) "Vers une perception active pour la reconnaissance automatique de la parole continue", Proceeds. 7èmes Journées Neurosciences et Sciences de l'Ingénieur, May 2-5, pp. 23-26.
- Lainé, A., Berthomier, C., Demars, C., Béroule, D. (1994) "Représentations du signal pour la reconnaissance de mots isolés par un Réseau à Propagation Guidée", LIMSI int. Report N° 94-12
- Westerlund, P., Béroule, D., Roques, M. (1994) "Parsing Experiments with a Guided Propagation Network", International Conference on New Methods in Language Processing (NeMLaP), 14-16 sept., Manchester.
- Béroule, D., Ruellan, H., von Hoe, R. (1994) "A Guided Propagation Model of Reading", Instituut vor Perceptie Onderzoek (IPO) Annual Progress Report 28, Eindhoven.
- Martin, J.C., Béroule, D. (1995) "Temporal Codes within a Typology of Cooperation Between Modalities", Artificial Intelligence Rev. 9, pp. 95-102.
- Martin, J.C., Veldman, R., Béroule, D. (1995) "Towards adequate representation technologies for multimodal interfaces", Proceeds. of the International Conference on Cooperative Multimodal Communication, Part II, pp. 207-224.
- Toffano-Nioche, C., Ruellan, H., Ménigault, C., Martin, J.C., Lainé, A., Béroule, D. (1996) "The Neverending Learning II", LIMSI internal Report N° 96-05.
- Béroule, D. (1996) "Représentation Topologique Spatio-temporelle pour la Communication Homme-Machine", Psychologie du Dialogue Homme-Machine en Langage Naturel, J.Vivier (Ed.), Europa Productions, pp. 141-174.
- Westerlund, P., Béroule, D., Roques, M. (1996) "Experiments in Robust Parsing with a Guided Propagation Network", New Methods in Language Processing, D.Jones (Ed.), UCL Press, London.
- Martin, J.-C., Veldman, R., Béroule, D. (1998) "Developing Multimodal Interfaces: A Theoretical Framework and Guided Propagation Network, in Multimodal Human-Computer Communication, H. Bunt, R.J. Beun, T. Borghuis (Eds.), Lecture notes in Computer Science; Vol. 1374 : Lecture notes in Artificial Experiments, Springer-Verlag, pp.158-187.
- Lainé, A., Béroule, D., Dermody, P. (1998) "Representation Issues in spoken word recognition: an account for the repetition effect" (invited paper), Proceed. of the Intern. Conf. on Computer Linguistics, Speech and Document Processing, February 18-20, Calcutta.
- Toffano-Nioche, C., Béroule, D., Tassin, J.-P. (1998) "A Functional Model of some Parkinson's Disease Symptoms using a Guided Propagation Network", Artificial Intelligence in Medicine, N°14, pp.237-258.
- Béroule D. (2003) "Apprentissage Dynamique de Cartes Conceptuelles", Bulletin de l'AFIA, avril 2003 n°54.
- Béroule, D. (2004) "An instance of Coincidence Detection Architecture relying on Temporal Coding", in IEEE Trans. On Neural Networks, Special Issue on Temporal Coding for Neural Information Processing, DeLiang Wang & al (Eds.), Vol. 15, N°5, pp. 963-979.
- Béroule, D.G., Zock M. (2009) "Modelling the tip-of-the-tongue state in Guided Propagation Networks", Proceedings of NLPCS 2009, 6<sup>th</sup> Int. Workshop on Natural Language Processing and Cognitive Science, INSTICC Press, Milan.
- Béroule, D., Gisquet-Verrier, P. (2012) "Decision Making Guided by Emotion : A computational model", WCCI 2012 IEEE World Congress on Computational Intelligence, IJCNN Proceeds, pp. 355-362, June, 10-15, Brisbane, Australia.
- Béroule, D., Gisquet-Verrier, P. (2013), "A Computational Architecture based on Emotional circuits", Note Int. LIMSI n°2013-21.
- Béroule, D., Gisquet-Verrier, P., (2015) "A Functional Model of Fast-Action Selection Guided by Emotional Stimuli", Note Interne LIMSI n°2015-10.
- Béroule, D. (2016) "Offline Encoding of Memory, whereby an Early Dysregulation of Sleep may induce Autism", *to be submitted*.