

**Daniel Yasumasa Takahashi**  
Curriculum Vitae

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## Personal Information

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## Formal Education

- 2015 –** Associate research Scholar  
Department of Psychology  
Princeton University, Princeton, NJ USA  
Scholarship: Pew Latin American Fellowship  
Supervisor: Asif Ghazanfar
- 2010 – 2015** Postdoctoral Research Fellow.  
Department of Psychology  
Princeton University, Princeton, NJ USA  
Scholarship: Pew Latin American Fellowship  
Supervisor: Asif Ghazanfar
- 2009 - 2010** Postdoctoral Research Fellow.  
Institute of Mathematics and Statistics  
Universidade de São Paulo, USP, Sao Paulo, Brazil  
Scholarship: Fundação de Amparo à Pesquisa do Estado de São Paulo  
Supervisor: Antonio Galves
- 2004 - 2009** PhD in Bioinformatics.  
Universidade de São Paulo, USP, Sao Paulo, Brazil  
Universidade de São Paulo  
Title: Medidas de Fluxo de Informação com Aplicação em Neurociência,  
Advisor: Koichi Sameshima and Luiz Antonio Baccalá  
Scholarship: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior
- 2004 - 2008** Bachelor's in Computational and Applied Mathematics.  
Universidade de São Paulo, USP, Sao Paulo, Brazil  
Title: Teorema do Núcleo de Schwartz  
Advisor: Paulo Domingos Cordaro
- 1998 - 2003** Medical degree.  
Universidade de São Paulo, USP, Sao Paulo, Brazil  
Title: Redes neurais artificiais no auxílio ao diagnóstico da doença de Alzheimer  
Advisor: Koichi Sameshima  
Scholarship: Conselho Nacional de Desenvolvimento Científico e Tecnológico

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## Honors and Awards

- 2010** Pew Latin American Fellowship
- 2007** Travel Grant Award - 10th Tamagawa-Riken Dynamic Brain Forum
- 2006** Best Work Award - I Latin American School on Computational Neuroscience

<b>2002</b>	Oswaldo Cruz Award in medical research – Honorable mention
<b>1997</b>	Bronze medal – Brazilian Mathematical Olympiad

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## Bibliographic Production

### Articles Published in Refereed Journals

\* = equal contribution

38. **Takahashi DY**, Fenley AR, Teramoto, Y, Narayanan DZ, Borjon JI, Holmes P, Ghazanfar AA (2015)  
The developmental dynamics of marmoset monkey vocal production.  
*Science*, v. 349, 730-734.
37. Choi JY, **Takahashi DY**, Ghazanfar AA (2015)  
Cooperative vocal control in marmoset monkeys via vocal feedback.  
*Journal of Neurophysiology*, v. 114, 274-283.
36. Sameshima K, **Takahashi DY**, Baccalá LA (2015)  
On statistical performance of Granger-causal connectivity estimators  
*Brain informatics*, 10.1007/s40708-015-0015-1, 1-15.
35. Galves A\*, Orlandi E\*, **Takahashi DY\*** (2015)  
Identifying interacting pairs of sites in Ising models on a countable set.  
*Brazilian Journal of Probability and Statistics*, in press.
34. Ghazanfar AA and **Takahashi DY** (2014)  
The evolution of speech: vision, rhythm, cooperation.  
*Trends in Cognitive Sciences*, v. 18, 543-553.
33. Ghazanfar AA, and **Takahashi DY** (2014)  
Facial expressions and the evolution of the speech rhythm.  
*Journal of Cognitive Neuroscience*, v. 26, 1196-1207
32. **Takahashi DY**, Baccalá LA, Sameshima K (2014)  
Canonical information flow decomposition among neural structure subsets.  
*Frontiers in Neuroinformatics*, doi: 10.3389/fninf.2014.00049
31. Lerasle M\*, and **Takahashi DY\*** (2014)  
Sharp oracle inequalities and slope heuristic for specification probabilities estimation in discrete random fields.  
*Bernoulli*, in press.
30. Gallesco C\*, Gallo S\*, **Takahashi DY\*** (2014)  
Explicit estimates in the Bramson-Kalikow model  
*Nonlinearity*, v. 27, 2281-2296.
29. Fujita A, **Takahashi DY**, Patriota AG, Sato JR (2014)  
A non-parametric statistical test to compare clusters with applications in functional magnetic resonance imaging data.  
*Statistics in Medicine*, v. 33, 4949-4962.
28. Fujita A, **Takahashi DY**, Patriota A (2014)  
A non-parametric method to estimate the number of clusters.  
*Computational Statistics and Data Analysis*, in press.
27. **Takahashi DY**, Narayanan DZ, Ghazanfar AA (2013)  
Coupled oscillator dynamics of vocal turn-taking in monkeys.  
*Current Biology*, v. 23, 2162-2168.

26. Santos SS, **Takahashi DY**, Nakata A, Fujita A (2013)  
A comparative study of statistical methods used to identify dependencies between gene expression signals  
*Briefing in Bioinformatics*, v. 15, 906-918.
25. Baccalá LA, de Brito CS, **Takahashi DY**, Sameshima K (2013)  
Unified asymptotic theory for all partial directed coherence forms  
*Philosophical Transactions of the Royal Society A*, v. 371, 20120158
24. Sato JR., **Takahashi DY**, Hoexeter, MQ, Massirer KM, Fujita A (2013)  
Measuring network's entropy in ADHD: A new approach to investigate neuropsychiatric disorders  
*Neuroimage*, v77, p. 44-51.
23. Gallo S\*, Lerasle M\*, **Takahashi DY\*** (2013)  
Markov approximations of chains of infinite order in the  $\bar{d}$ -metric  
*Markov Processes and Related Fields*, v. 19, 51-82.
22. Gallo S\* and **Takahashi DY\*** (2012)  
Attractive regular stochastic chains: perfect simulation and phase transition.  
*Ergodic Theory and Dynamical System*, FirstView, p.1-20, <http://dx.doi.org/10.1017/etds.2013.7>
21. **Takahashi DY**, Sato JR, Ferreira CE, Fujita A (2012)  
Discriminating different classes of biological networks by analyzing the graphs spectra distribution.  
*PLoS ONE*, v. 7(12): e49949. doi:10.1371/journal.pone.0049949
20. Ghazanfar AA, **Takahashi DY**, Mathur NA, Fitch WT (2012)  
Cineradiography of monkey lipsmacking reveals the putative origins of speech dynamics.  
*Current Biology*, v. 22, p. 1176-1186.
19. Lerasle M\* and **Takahashi DY\*** (2011)  
An oracle approach for interaction neighborhood estimation in random fields.  
*Electronic Journal of Statistics*, v. 5, p. 534-571.
18. **Takahashi DY**, Baccalá LA and Sameshima K (2010)  
Information theoretic interpretation of frequency domain connectivity measures.  
*Biological Cybernetics*, v.103, p. 463-469.
17. Sato JR , **Takahashi DY**, Arcuri SM, Sameshima K, Morettin PA, Baccalá, LA (2009)  
Frequency domain connectivity identification: An application of partial directed coherence in fMRI.  
*Human Brain Mapping*, v. 30, p. 452-461.
16. Dzirasa K., Ramsey AJ, **Takahashi DY**, Stapleton J, Potes JM, Williams JK, Gainetdinov RR, Sameshima K, Caron MG, Nicolelis MAL (2009)  
Hyperdopaminergia and NMDA Receptor Hypofunction Disrupt Neural Phase Signaling.  
*The Journal of Neuroscience*, v. 29, p. 8215-8224.
15. Raicher I, Shimizu M, **Takahashi DY**, Nitrini R, Caramelli P (2008)  
Alzheimer's disease diagnosis disclosure in Brazil: a survey of specialized physicians' current practice and attitudes.  
*International Psychogeriatrics*, v. 20, p. 471-481.
14. **Takahashi DY**, Baccalá L, Sameshima, K (2008)  
Partial directed coherence asymptotics for VAR processes of infinite order.  
*International Journal of Bioelectromagnetism*, v. 10, p. 31-36.
13. Lopes RI, Nogueira L, Albertotti CJ, **Takahashi DY**, Lopes RN (2008)  
Comparison of of virtual cystoscopy and transabdominal ultrasonography with conventional cystoscopy for bladder tumor detection.  
*Journal of Endourology*, v. 22, p. 1725-1729.
12. Shimizu M, Raicher I, **Takahashi DY**, Caramelli P, Nitrini R (2008)

Disclosure of the diagnosis of Alzheimer's disease: caregivers' opinions in a Brazilian sample.  
*Arquivos de Neuro-Psiquiatria*, v. 66, p. 625-630.

11. Raicher I, **Takahashi DY**, Kanda PAM, Nitrini R, Anghinah R (2008)  
qEEG spectral peak in Alzheimer's disease: a possible tool for treatment follow-up.  
*Dementia & neuropsychologia*, v. 2, p. 9-12.

10. **Takahashi DY**, Baccalá LA, Sameshima K (2007)  
Connectivity Inference via Partial Directed Coherence.  
*Journal of Applied Statistics*, v. 34, p. 1259-1273.

9. Vittielo AP, Ciriaco JG, **Takahashi DY**, Nitrini R, Caramelli P (2007)  
Brief cognitive evaluation of patients attended in a general neurological outpatient clinic.  
*Arquivos de Neuro-Psiquiatria*, v. 65, p. 299-303.

8. Sato JR, Felix MM, **Takahashi DY**, Amaro Jr E, Brammer MJ, Morettin PA (2006)  
A method to produce evolving functional connectivity maps during the course of an fMRI experiment using wavelet based time-varying Granger causality.  
*NeuroImage*, v. 31, p. 187-196.

7. Sato JR, **Takahashi DY**, Cardoso EF, Martin MGM, Amaro Jr E, Morettin PA (2006)  
Intervention Models in Functional Connectivity Identification Applied to fMRI.  
*International Journal of Biomedical Imaging*, v. 2006, p. 1-7.

6. Nitrini R, Caramelli P, Herrera E, Castro I, Bahia VS, Anghinah R, Caixeta L, Radanovic M, Charchat-Fichman H, Porto CS, Carthery MT, Hartmann APBJ, Huang N, Smid J, Lima P, **Takahashi DY**, Takada LT (2005)  
Mortality from dementia in a community-dwelling Brazilian population .  
*International Journal of Geriatric Psychiatry*, v. 20, n. 3, p. 247-253.

5. Nitrini R, Caramelli P, Herrera E, Bahia VS, Caixeta L, Radanovic M, Anghinah R, Charchat-Fichman H, Porto CS, Carthery MT, Hartmann APBJ, Huang N, Smid J, Lima P, Takada LT, **Takahashi DY** (2005)  
Incidence of dementia in a community-dwelling Brazilian population.  
*Alzheimer Disease and Associated Disorders*, v. 18, n. 4, p. 241-246.

4. Sameshima K, **Takahashi DY**, Baccalá, LA (2005)  
Avaliando a complexidade da dinâmica cardiovascular por entropia amostral.  
*Revista Brasileira de Hipertensão*, v. 12, n. 1, p. 27-32.

3. Anghinah R, Caramelli P, **Takahashi DY**, Nitrini R, Sameshima K (2005)  
EEG alpha band coherence analysis in healthy adults: preliminary results.  
*Arquivos de Neuro-Psiquiatria*, v. 63, n. 1, p. 83-86.

2. Costa GGO, Ctenas BB, **Takahashi DY**, Mion O, Mello JJF, Butugan O (2005)  
Comparação entre a Rinometria Acústica, 'Peak Flow' Nasal Inspiratório e sua Correlação com Sintomas e Sinais Clínicos de Rinite.  
*Arquivos de Otorrinolaringorologia*, v. 9, n. 3, p. 203-211.

1. Hartmann APBJ, Almeida SM, Livramento JA, Nitrini R, **Takahashi DY**, Caramelli P (2004)  
Hyperphosphorylated tau protein in the cerebrospinal fluid of patients with Alzheimer's disease and other dementias: preliminary findings.  
*Arquivos de Neuro-Psiquiatria*, v. 62, n. 3b, p. 751-755.

## Book Chapters

5. **Takahashi DY**, Baccalá LA, Sameshima K (2014)  
Information Partial Directed Coherence  
In: *Methods in Brain Connectivity Inference through Multivariate Time Series Analysis*, p. 75-86.

4. Baccalá LA, **Takahashi DY**, Sameshima K (2014)  
Asymptotic PDC Properties  
In: Methods in Brain Connectivity Inference through Multivariate Time Series Analysis, p. 113-131.
3. Baccalá LA, **Takahashi DY**, Sameshima K (2006)  
Computer intensive testing for the influence between time-series  
In: Handbook of Time Series Analysis ed: Wilterhalter; Schelter; Timmer, Springer, p. 411-435.
2. Sameshima K, **Takahashi DY** (2004)  
Métodos Quantitativos em Medicina  
In: Métodos Quantitativos em Medicina ed. São Paulo : Manole, v.1, p. 493-526.
1. **Takahashi DY**, Charchat H, Nitrini R, Caramelli P, Sameshima K (2000)  
Exploração de redes neurais artificiais no auxílio ao diagnóstico neuropsicológico da doença de Alzheimer.  
In: Anais do I congresso de lógica aplicada à tecnologia - LAPTEC.1 ed. São Paulo : Plêiade, v.1, p. 359-371.

#### Articles Published in Refereed Proceedings (complete)

4. Brito SC, Baccalá LA, **Takahashi DY**, Sameshima K (2010)  
Asymptotic behavior of generalized partial directed coherence  
*IEEE Engineering in Medicine and Biology Society. Conf.* , v.1, p.1718 - 1721.
3. **Takahashi DY**, Baccalá LA, Sameshima K (2010)  
Frequency domain connectivity: an information theoretic perspective  
*IEEE Engineering in Medicine and Biology Society. Conf.* , v.1, p.1726 - 1729.
2. Baccalá LA, **Takahashi DY**, Sameshima K (2007)  
Generalized Partial Directed Coherence  
*International Conference on Digital Signal Processing*, v.1. p.162 - 166
1. **Takahashi DY**, Charchat H, Caramelli P, Nitrini R, Sameshima K  
Análise da não-linearidade do modelo diagnóstico neuropsicológico da doença de Alzheimer por redes neurais artificiais  
*Anais do VII congresso brasileiro de informática em saúde*, 2000.

#### Articles in Magazines

2. Takahashi DY  
Total Saúde. , v.30, p.14 - 14, 2010.  
<http://www.revistatotalsaude.com.br/Default.aspx?Tabid=55&ItemID=128>
1. Takahashi DY  
Total Saúde. , p.12 - 13, 2010.  
<http://www.revistatotalsaude.com.br/Default.aspx?Tabid=56&ItemID=148>