

Viviana Siless, Ph.D.

(Professor, Computer Scientist)

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Spanish/English/French

ACADEMIA

◇ *2015-2020* Full-time Assistant Professor and AI researcher at the [University Torcuato Di Tella](#), Buenos Aires, Argentina. Laboratory of Artificial Intelligence. Lecturing: Deep Learning and Blockchain.

ENTREPRENEURSHIP

◇ *2018-current* Co-founder and CTO at **Quipu Bank**: Quipu provides financial services for the informal economy of LatAm. At Quipu we develop our credit score algorithm using AI, and we develop a web3 lending protocol. **Awards**: the IDB Lab, Fundacion Santo Domingo, Village Capital, Visa Everywhere, Finnovista, FinnoSummit Algorand blockchain solutions, World Bank Group, Fast Forward, Upswell, MIT designX, MIT sandbox and MIT innovation initiative.

Fast Company: [The 10 most innovative companies in Latin America in 2022](#)

C-LEVEL

◇ *2021-current* Chief Technology Officer (CTO) at **BioMakers**. Leading development for oncological gene testing platform, doctors request, doctors educational platform about pharmas and new available therapies, data acquisition, data curation, AI projects for drug discovery and therapies evolution.

EDUCATION

◇ *2015-2020* Post. Doc at the [Athinoula A. Martinos Center for Biomedical Imaging, MGH / Harvard Medical School](#), Boston, U.S.. laboratory of computational neuroimaging (**LCN**).

◇ *2010-2014* Ph.D. in Computer Science, Université Paris-sud (EDIPS), France. **Parietal Team, INRIA Saclay**. Research Topic: Multi-modal and multi-structure image registration for the human brain.

◇ *2007-2010* M.Sc. in Computer Science. **School of Sciences, University of Buenos Aires, Argentina**

HONORS

◇ *2023* Polkadot Berkeley Academy Founders Track: top 5 pitch.

◇ *2022* Fair and equitable AI, BID lab, 750K. (Quipu).

◇ *2021* Global Digital Disruptor Award.

◇ *2021* Algorand Foundation Grants. 200K usd.

◇ *2021* Algorand Finnovista Summit - 2nd Place Winner.

◇ *2017* Google -Women Techmakers -TensorFlow Dev Summit Travel grant.

◇ *2013* Trainee Abstract Travel Award for the Organization for Human Brain Mapping.

◇ *2002* Volleyball World Cup Technical support internship due to high school highest grades.

DIVERSITY AND INCLUSION

◇ *2019-2020* Chair of [Women in Science](#) at the Martinos Center for Biomedical Imaging. Lectures and meetings to bring awareness of gender, racial, cultural, and identity discrimination in the workspace.

TEACHING AND ORGANIZING SEMINARS

- ◇ 2023 ISBI Industrial Day, Cartagena, Colombia.
 - ◇ 2022 Seminario de Inteligencia Artificial en Medicina (SIAM), UTDT, Argentina.
 - ◇ 2019-2020 Co-organizer of Brain Map Seminar Series at Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital / Harvard Medical School.
 - ◇ 2018 Co-chair of organizing committee, BrainHack Global Boston, MIT (International event)
 - ◇ 2016-2018 Teaching assistant and lecturer for the FreeSurfer bi-annual course. Course description [here](#).
- MGH/Harvard Medical school**
- ◇ 2008-2009 **School of Sciences, University of Buenos Aires, Argentina**. Teaching assistant for the *Software Engineering I* course at the Department of Computer Sciences.

INVITED TALKS

- ◇ 2023 The Digital Future: Fintech, AI, and the Path to Financial Inclusion. Berkeley University, USA.
- ◇ 2023 Workshop: Cómo deployar un contrato ERC-20. LaBitconf, Argentina.
- ◇ 2023 Quipu: Leveraging AI to build an alternative credit score for informal businesses in Latin America. Change Seminar, Washington University, USA.
- ◇ 2023 Credit Scoring XVII conference, University of Edinburgh, Scotland, UK.
- ◇ 2018 Open Science Room - Organization for the Human Brain Mapping, Singapore.
- ◇ 2017 Psychology Department, Harvard University, USA.
- ◇ 2017 International Society for Magnetic Resonance in Medicine, Hawaii, USA.
- ◇ 2013 Organization for the Human Brain Mapping, Seattle, USA.
- ◇ 2012 LIAMA, Laboratory of Informatics, Automation and Applied Mathematics, Beijing, China.
- ◇ 2011 Multimodal Brain Image Analysis Workshop, Toronto, Canada.

INDUSTRY PROFESSIONAL EXPERIENCE

- ◇ 2007-2009 Software architect and Full-stack Software Developer at **Lagash Systems**
- ◇ 2005-2006 Full-stack Software Developer at **Accendra, currently Globant**

TECHNICAL SKILLS

- ◇ Programming languages: C, C++, Java, C#, Python, ASP .net, Visual Basic, SQL, JavaScript, HTML, ASP, JSP, CSS, node.js, angular, Firebase, ionic, solidity, rust.
- ◇ Skills: machine learning, optimization methods, statistical analysis, blockchain, diffusion MRI, Magnetic Resonance Imaging (MRI) sequence set up and operation.

TOP PUBLICATIONS

Full publication record: <https://scholar.google.com/citations?user=TcvYFPUAAAAJ>

- ◇ Siless, V., Hubbard, N. A., Jones, R., Wang, J., Lo, N., Bauer, C. C. C., ... Yendiki, A. (2020). Image acquisition and quality assurance in the Boston Adolescent Neuroimaging of Depression and Anxiety study. *NeuroImage: Clinical*, 26, 102242. <https://doi.org/10.1016/j.nicl.2020.102242>
- ◇ Siless V, Chang K, Fischl B, Yendiki A: Anatomical Cuts: Hierarchical clustering of tractography streamlines based on anatomical similarity. *NeuroImage* 166: 32-45 (2018)
- ◇ Siless V, Glaunes JA, Guevara P, Mangin J-F, Poupon C, Le Bihan D, Thirion B, Fillard P: Joint T1 and Brain Fiber Log-Demons Registration Using Currents to Model Geometry. *Medical Image Computing and Computer Assisted Intervention (MICCAI)* (2) 2012: 57-65

PUBLICATIONS

Citations: <https://scholar.google.com/citations?user=TcvYFPUAAAAJ>

- Feldman, P., Fainstein, M., **Siless, V.**, Delrieux, C., Iarussi, E. (2023). VesselVAE: Recursive Variational Autoencoders for 3D Blood Vessel Synthesis. 67–76.
https://doi.org/10.1007/978-3-031-43907-0_7/COVER
- Hubbard, N. A., Auerbach, R. P., **Siless, V.**, Lo, N., Frosch, I. R., Clark, D. E., Jones, R., Kremens, R., Pinaire, M., Vaz-DeSouza, F., Ghosh, S. S., Henin, A., Hofmann, S. G., Pizzagalli, D. A., Rosso, I. M., Yendiki, A., Whitfield-Gabrieli, S., Gabrieli, J. D. E. (2022). Connectivity Patterns Evoked by Fearful Faces Demonstrate Reduced Flexibility Across a Shared Dimension of Adolescent Anxiety and Depression. <https://doi.org/10.1177/21677026221079628>
- Auerbach, R. P., Pagliaccio, D., Hubbard, N. A., Frosch, I., Kremens, R., Cosby, E., Jones, R., **Siless, V.**, Lo, N., Henin, A., Hofmann, S. G., Gabrieli, J. D. E., Yendiki, A., Whitfield-Gabrieli, S., Pizzagalli, D. A. (2021). Reward-Related Neural Circuitry in Depressed and Anxious Adolescents: A Human Connectome Project. *Journal of the American Academy of Child Adolescent Psychiatry*.
<https://doi.org/10.1016/j.jaac.2021.04.014>
- Liu, C. J., Ammon, W., **Siless, V.**, Fogarty, M., Wang, R., Atzeni, A., Aganj, I., Iglesias, J. E., Zöllei, L., Fischl, B., Schmahmann, J. D., Wang, H. (2021). Quantification of volumetric morphometry and optical property in the cortex of human cerebellum at micrometer resolution. *BioRxiv*, 2021.04.27.441546. <https://doi.org/10.1101/2021.04.27.441546>
- Gau, R., Noble, S., Heuer, K., Bottenhorn, K. L., Bilgin, I. P., Yang, Y.-F., Huntenburg, J. M., Bayer, J. M. M., Bethlehem, R. A. I., Rhoads, S. A., Vogelbacher, C., Borghesani, V., Levitis, E., Wang, H.-T., van den Bossche, S., Kobeleva, X., Legarreta, J. H., Guay, S., Atay, S. M., ... Zuo, X.-N. (2021). Brainhack: Developing a culture of open, inclusive, community-driven neuroscience. *Neuron*, 109(11).
<https://doi.org/10.1016/j.neuron.2021.04.001>
- Lee, Y.J., Guell, X., Hubbard, N.A., **Siless, V.** et al. Functional Alterations in Cerebellar Functional Connectivity in Anxiety Disorders. *Cerebellum* 20, 392–401 (2021).
<https://doi.org/10.1007/s12311-020-01213-8>
- Rosas HD, Lewis LR, Mercaldo ND, Nasr S, Brickman AM, **Siless V**, Yassa M, Sathishkumar M, Lott I, Schupf N, Silverman W, Lai F. Altered connectivity of the default mode network in cognitively stable adults with Down syndrome: “accelerated aging” of a prelude to Alzheimer’s disease. *Alzheimer’s and Dementia: Diagnosis, Assessment and Disease Monitoring*. 2020; (in press).
- **Siless, V.**, Davidow, J. Y., Nielsen, J., Fan, Q., Hedden, T., Hollinshead, M., ... Yendiki, A. (2020). Registration-free analysis of diffusion MRI tractography data across subjects through the human lifespan.
- **Siless, V.**, Hubbard, N. A., Jones, R., Wang, J., Lo, N., Bauer, C. C. C., ... Yendiki, A. (2020). Image acquisition and quality assurance in the Boston Adolescent Neuroimaging of Depression and Anxiety study. *NeuroImage: Clinical*, 26, 102242. <https://doi.org/10.1016/j.nicl.2020.102242>

- Hubbard, N. A., **Siless, V.**, Frosch, I. R., Goncalves, M., Lo, N., Wang, J., ... Whitfield-Gabrieli, S. (2020). Brain function and clinical characterization in the Boston adolescent neuroimaging of depression and anxiety study. *NeuroImage: Clinical*, 27, 102240. <https://doi.org/10.1016/j.nicl.2020.102240>
- Morfini, F., Zhang, J., Lee, Y. J., Nieto Castanon, A., Hubbard, N., **Siless, V.**, ... Whitfield-Gabrieli, S. (2020). Resting State Connectivity Associated With Changes in Anxiety Symptoms in Adolescence Over One Year. *Biological Psychiatry*, 87(9), S332. <https://doi.org/10.1016/j.biopsych.2020.02.852>
- Zhang, J., Morfini, F., Lee, Y. J., Nieto Castanon, A., Yendiki, A., Hubbard, N., **V., Siless** ... Whitfield-Gabrieli, S. (2020). Multimodal Brain Connectomics Predict Longitudinal Symptom Change in Adolescent Depression. *Biological Psychiatry*, 87(9), S201. <https://doi.org/10.1016/j.biopsych.2020.02.523>
- **Siless V**, Chang K, Fischl B, Yendiki A: Anatomical Cuts: Hierarchical clustering of tractography streamlines based on anatomical similarity. *NeuroImage* 166: 32-45 (2018)
- Siless A, Chang K, Fischl B, Yendiki A: Hierarchical Clustering of Tractography Streamlines Based on Anatomical Similarity. *Medical Image Computing and Computer Assisted Intervention (MICCAI)* (1) 2016: 184-191
- **Siless V**, Medina S, Fillard P, Thirion B: Unsupervised Fiber Bundles Registration Using Weighted Measures Geometric Demons. *Multimodal Brain Image Analysis 2013*: 95-106
- **Siless V**, Medina S, Varoquaux G, Thirion B: A Comparison of Metrics and Algorithms for Fiber Clustering. *IEEE Pattern Recognition in Neuroimaging 2013*: 190-193
- **Siless V**, Glaunes JA, Guevara P, Mangin J-F, Poupon C, Le Bihan D, Thirion B, Fillard P: Joint T1 and Brain Fiber Log-Demons Registration Using Currents to Model Geometry. *Medical Image Computing and Computer Assisted Intervention (MICCAI)* (2) 2012: 57-65
- Ng B, **Siless V**, Varoquaux G, Poline J-B, Thirion B, Abugharbieh R: Connectivity-informed Sparse Classifiers for fMRI Brain Decoding. *IEEE Pattern Recognition in Neuroimaging 2012*: 101-104
- **Siless V**, Guevara P, Pennec X, Fillard P: Joint T1 and Brain Fiber Diffeomorphic Registration Using the Demons. *Multimodal Brain Image Analysis 2011*: 10-18

CONFERENCE ABSTRACTS

- Multi-modal refinement of pial surfaces based on T1-MPRAGE and T2 images Viviana Siless, Bruce Fischl, Douglas Greve. Organization for the Human Brain Mapping, 2020.
- Cluster-based analysis of diffusion MRI tractography measures in Huntington's disease. Viviana Siless, Herminia Diana Rosas. Organization for the Human Brain Mapping, 2020.
- The optical property and morphometry of human cerebellum cortex with automatic serial sectioning polarization sensitive optical coherence tomography (Conference Presentation). Wang, H., **Siless, V.**, Fogarty, M., Aganj, I., Greve, D., and Fischl, B. (2020). In Q. Luo, J. Ding, and L. Fu (Eds.), *Neural Imaging and Sensing 2020* (Vol. 11226, p. 25). SPIE. <https://doi.org/10.1117/12.2550620>
- Surface and thickness of cerebellar cortex with polarization sensitive optical coherence tomography. Viviana Siless, Morgan Fogarty, Douglas Greve, Bruce Fischl, Hui Wang. Organization for the Human Brain Mapping; 2019 June 9; Rome, Italy.

- Hubbard, N.A., Lo, N., Goncalves, M., Frosch, I., **Siless, V.**, Bauer, C., Conroy, K., Cosby, E., Hay, A., Jones, R., Pinaire, M., Vaz De Souza, F., Vergara, G., Henin, A., Hirshfeld-Becker, D., Hofmann, S., Pizzagalli, D., Yendiki, A., Auerbach, R., Ghosh, S., Gabrieli, J.D.E., Whitfield-Gabrieli, S. (May, 2019). Cognitive control-related brain activation patterns predict adolescent anhedonia symptoms. Association for Psychological Science Annual Conference. Washington, D.C.
- fMRI activation predicts depressive episodes in highly-comorbid adolescents Frosch, I., Hubbard, N.A., Goncalves, M., **Siless, V.**, Wang, J., Vergara, G., Conroy, K., Bauer, C., Vaz De Souza, F., Kaczmarzyk, J.R., Rosso, I., Hirshfeld-Becker, D.R., Henin, A., Hofmann, S., Pizzagalli, D., Ghosh, S., Auerbach, R., Yendiki, A., Gabrieli, J.D.E., Whitfield-Gabrieli, S. Society for Neuroscience, Nov 3, 2018.
- Boston Adolescent Neuroimaging of Depression and Anxiety Consortium: Preliminary diffusion MRI results. **Siless V**, Wang J, Vergara G, Hubbard N, Bauer C, Goncalves M, Conroy K, Frosch I, Vaz De Souza F, Rosso I, Hirshfeld-Becker D, Henin A, Hofmann S, Pizzagalli D, Ghosh S, Gabrieli J, Whitfield-Gabrieli S, Auerbach R, Yendiki A. Organization for the Human Brain Mapping; 2018 June 17; Singapore, Singapore.
- Anatomically-guided streamline clustering in newborns using AnatomicCuts. **Siless V**, Yendiki A, Zollei L. Organization for the Human Brain Mapping; 2018 June 17; Singapore, Singapore.
- Boston Adolescent Neuroimaging of Depression and Anxiety Consortium: Preliminary resting-state results. Bauer C, **Siless V**, Wang J, Goncalves M, Frosch I, Hubbard N, Vergara G, Conroy K, Vaz De Souza F, Rosso I, Hirshfeld-Becker D, Henin A, Hofmann S, Pizzagalli D, Ghosh S, Auerbach R, Yendiki A, Gabrieli J, Whitfield-Gabrieli S. Organization for the Human Brain Mapping; 2018 June 17; Singapore, Singapore.
- Boston Adolescent Neuroimaging of Depression and Anxiety Consortium: Preliminary task fMRI results. Hubbard N, Goncalves M, Frosch I, **Siless V**, Wang J, Vergara G, Conroy K, Bauer C, Vaz De Souza F, Rosso I, Hirshfeld-Becker D, Henin A, Hofmann S, Pizzagalli D, Ghosh S, Auerbach R, Yendiki A, Gabrieli J, Whitfield-Gabrieli S. Organization for the Human Brain Mapping; 2018 June 17; Singapore, Singapore.
- Registration-free analysis of diffusion MRI tractography data across subjects through the human lifespan. **Siless V**, Davidow JY, Nielsen J, Fan Q, Hedden T, Hollinshead M, Bustamante CV, Drews MK, Van Dijk KR, Sheridan MA, Buckner RL, Fischl B, Somerville L, Yendiki A. International Society for Magnetic Resonance in Medicine; 2017; Honolulu, Hawaii, US.
- Brain Image and Fiber Log-demons Registration with Currents. **Siless V**, Glaunes J, Guevara P, Mangin J, Poupon C, LeBihan D, Thirion B, Fillard P. Organization for the Human Brain Mapping; 2013; Seattle, US.
- Joint T1 and brain fiber diffeomorphic registration using the demons. **Siless V**, Guevara P, Penne X, Fillard P, Thirion B. Organization for the Human Brain Mapping; 2012; Beijing, China.