

# Rafael Gonçalves de Lima

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## Address

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## Telephone

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<b>ACADEMIC DEGREES</b>	<b>Bachelor in Electrical Engineering,</b> 2010-2014 Emphasis: Control Systems Universidade Federal da Bahia (UFBA), Salvador/BA - Brazil
	<b>with Exchange Studies</b> 2012-2013 Dept. of Electrical Engineering, POSTECH, Pohang - Republic of Korea
	<b>M.S. in Computer Science and Engineering</b> 2015-2017 School of Electrical and Computer Engineering, UNIST, Ulsan - Republic of Korea
	<b>M.Sc. in Biomedical Engineering</b> 2024 School of Electrical and Computer Engineering, Unicamp, Campinas-SP - Brazil
<b>SELECTED WORK EXPERIENCE</b>	<b>R&amp;D Specialist</b> 06/2019-Present Samsung R&D Institute Brazil (SRBR), Campinas-SP, Brazil
	<ul style="list-style-type: none"><li>• Physiological data collection, cleansing and analysis for improvement of wearable devices software</li><li>• Elaboration of metadata files and technical reports</li><li>• Implementation of state-of-the-art denoising techniques</li><li>• Code Optimization and Project Management</li><li>• Project Leader since Feb/2023</li></ul>
	<b>Data Engineer (Support for Data Production)</b> 01/2019-05/2019 Center for Integration of Data and Knowledge for Health (CIDACS), FIOCRUZ, Brazil
	<ul style="list-style-type: none"><li>• Analysis of large databases for research projects in Epidemiology and Public Health;</li><li>• Data Conversion, Standardization and Cleansing for Data Lake, Code Review;</li><li>• Elaboration of Technical Reports and Data Dictionaries, Seminar Attendance;</li></ul>
	<b>Visiting Fellowship</b> 09/2018-12/2018 Max Planck Institute for Software Systems (MPI-SWS), Germany
	<ul style="list-style-type: none"><li>• Conceptual development and experiments on Kullback-Leibler Control of Continuous-Time Markov Chains.</li></ul>
<b>SELECTED PUBLICATIONS</b>	<b><i>“Correlation-Boosted Ensemble Local Patterns for Photoplethysmographic Signal Quality Classification”</i></b> 2024 (G.LUCAFO, R.LIMA, I.SANDOVAL, L.ALBANY, O.PENATTI) <i>Journal Paper</i> IEEE Signal Processing Letters
	<b><i>“Photoplethysmography Signal Quality Assessment using Attentive-CNN Models”</i></b>

(L.SILVA, R.LIMA, G.LUCAFO, I.SANDOVAL, P.FREITAS, O.PENATTI)  
2024

Conference Paper

Brazilian Symposium on Computing Applications to Healthcare (SBCAS)

*“Machine Learning Framework for Inter-Beat Interval Estimation using Wearable Photoplethysmography Sensors”*

(V.FIORAVANTI, P.RODRIGUES, R.LIMA, G.LUCAFO, F.CABELLO, P.FREITAS, I.SEIDEL, O.PENATTI) 2024

Journal Paper

Biomedical Signal Processing and Control

*“Center-Asymmetric-and-Symmetric Local Binary Pattern for Photoplethysmogram Quality Assessment”*

(P.FREITAS, R.LIMA, G.LUCAFO, P.RODRIGUES, I.ESTILON, R.HIGA, T.REZENDE, R.BISPO, G.LUZ, O.PENATTI) 2023

Patent App

*“Neural Architecture Search of Tiny Inter-beat Interval Detectors”*

(R.LIMA, P.FREITAS, G.LUCAFO, V.FIORAVANTI, I.SEIDEL, O.PENATTI) 2023

Conference Paper

EUSIPCO 2023

*“Photoplethysmogram Signal Quality Assessment via Gramian Fields and Visual Transformers”*

(P.FREITAS, R.LIMA, G.LUCAFO, O.PENATTI) 2023

Conference Paper

EUSIPCO 2023

*“Photoplethysmogram Signal Quality Assessment via 1D-to-2D Projections and Visual Transformers”*

(P.FREITAS, R.LIMA, G.LUCAFO, O.PENATTI) 2023

Conference Paper

QoMEX 2023

*“Fully Neural-based Out-of-Distribution Detection for Temporal Point Processes”*

(R.LIMA, C.SOLOMOU) 05/2023

Workshop Paper

DG @ ICLR 2023 - Virtual

*“Machine Learning Framework for Inter-Beat Interval Estimation using Wearable Photoplethysmography Sensors”*

(V.FIORAVANTI, P.RODRIGUES, R.LIMA, G.LUCAFO, F.CABELLO, P.FREITAS, I.SEIDEL, O.PENATTI) 2023

Patent App

*“Learning to estimate heart rate from accelerometer and user’s demographics during physical exercises”*,

(A.PACHECO, F.CABELLO, P.RODRIGUES, D.MIRALDO, V.FIORAVANTI, R.LIMA, A.FONOFF, P.PINTO, O.PENATTI) 2023

Journal Paper

IEEE Journal of Biomedical and Health Informatics

- “Hawkes Processes Modeling, Inference and Control: An Overview”*  
**(R.LIMA)** 2023  
 Journal Paper  
 SIAM Review
- “Signal Quality Assessment of Photoplethysmogram Signals Using Hybrid Rule- and Learning-Based Models”*  
**(G.LUCAFO,P.FREITAS,R.LIMA,G.LUZ,R.BISPO,P.RODRIGUES, F.CABELLO,O.PENATTI)** 2023  
 Journal Paper  
 Journal of Health Informatics
- “Fine-Grained eps-Margin Closed-Form Stabilization of Parametric Hawkes Processes”*  
**(LIMA, R.)** 05/2021  
 Workshop Paper  
 RobustML @ ICLR 2021 - Virtual
- “Bayesian Compressed Deep Learning for State Estimation of Unobservable Power Systems”*  
**(LIMA, R.)** 05/2021  
 Workshop Paper  
 Neural Compression @ ICLR 2021 - Virtual
- “Implementation of End-to-End Training of Deep Visuomotor Policies for Manipulation of a Robotic Arm of Baxter Research Robot”*  
**(S. KIM, S.-A KIM, R.LIMA, J.CHOI)** 01/2019  
 Journal Paper (in Korean)  
 Journal of Korea Robotics Society Vol.14 No.1 pp.40-49
- “Automatic Decomposition of Self-Triggering Kernels of Hawkes processes”*  
**(LIMA, R.; CHOI, J.)** 11/2017  
 Conference Paper  
 PACS 2017  
 (International Symposium for Perception, Action and Cognitive Systems - Seoul/Republic of Korea)
- “Improving Imprecise Compressive Sensing Models”*  
**(LEE, D.; LIMA, R.; CHOI, J.)** 06/2016  
 Conference Paper  
 UAI 2016 (Association for Uncertainty in Artificial Intelligence - New York/USA)
- “Self-adjustable Robustness Filter for Dead-time Processes”*  
**(LIMA, R.G.; SANTOS, T.L.M)** 10/2015  
 Conference Paper (in Portuguese)  
 SBAI 2015 (Brazilian Symposium on Intelligent Automation - Natal/RN - Brazil)

**CONFERENCES / WORKSHOPS** ICLR 2023, International Congress of Mathematicians (ICM 2022) (Virtual), Oxford ML Summer School (OxML 2022) (In Person), ECML-PKDD 2021, ECML-PKDD 2020, ICML 2020, COLT 2020, ACML 2017, PACS 2017

**COMPUTER SKILLS** Python (Tensorflow/Keras/PyTorch), C++, Matlab, LaTeX, Beamer, MongoDB, Scrum, Git

**IDIOMS** Portuguese (native), English (fluent/C1), French (intermediate), Korean (basic), German (basic)

**HONORS AND AWARDS** Silver Award - Bio and Health track - Samsung Best Paper Award 2021  
*Science without Borders* - Graduate Studies Scholarship (2015) - Declined  
ECML-PKDD 2020 Community Engagement Award  
*“Science without Borders”* Exchange Student Scholarship (08/2012-08/2013)  
Silver Medal, State Chemistry Olympics (2006)

**COMMUNITY SERVICE** Reviewer: AAAI 2017, BAI@NeurIPS 2020, BAI@NeurIPS 2021  
Invited Reviewer: Statistics and Probability Letters (2021)