

# Prof. Dr. Elias César Araújo de Carvalho

*IT Support for Scientific Research | Mentor for Master's and Ph.D. students*

## Personal Information

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## Skills

SCIENTIFIC WRITING TRAINING  
DATA ANALYSIS  
R AND RSTUDIO  
BUSINESS INTELLIGENCE ANALYSIS  
QLIKSENSE DEVELOPER  
DATABASE BUILDER (DB2 / MYSQL)  
SQL ELABORATION  
LINUX / WINDOWS SERVER  
BASH SCRIPTING  
GIT HUB / GOOGLE DRIVE  
PROBLEMS SOLVING  
INTERPERSONAL COMMUNICATION  
TIME MANAGEMENT  
MULTITASKING  
TRELLO TASK ORGANIZATION  
INTERMEDIATE TO ADVANCED  
ENGLISH  
SPANISH INTERMEDIARY  
PORTUGUESE ADVANCED



## Summary

PhD in Computing (Machine Learning) by PPGIA-Postgraduate Program in Applied Computing by PUC-PR(2017). Specialist in Applied Statistics by UEM- State University of Maringá (2014). Master in Computer Science (High Performance Computing) by UFRGS-Federal University of Rio Grande do Sul (2002). Specialist in Information Systems from UEM (1997). Graduated in Data Processing Technology FASP-Associated Colleges of São Paulo (1992). He served as coordinator of scientific research methods and IT support for the Research on Research group at DUKE University from 2008 to 2013. He is a computer analyst at UEM in the area of business intelligence (Qlik Sense/View). Professor of statistical analysis methods at the Professional Master's Degree in Management, Technology and Innovation in Urgency and Emergency at UEM. Consultant in IT support for scientific research in health. Specialist in installation of the environment for electronic data collection REDCap (Research Electronic Data Capture). He has publications in the area of scientific research using simulation, system dynamics and data science as a support for scientific research. Has intermediate to advanced fluency in English and basic fluency in Spanish. My current research area involves two interests: 1) Combining scientific writing methods with IT and Machine Learning tools to implement the Research Improvement Program (RIP) and 2) Software development to support the area of Urgency and Emergency.



## Formal Education

### PhD in Applied Computing - 2013 - 2018

Pontifical Catholic University - Curitiba, PUC-PR, Brazil

Advisor: Prof. Dr. Júlio César Niévola

Sandwich in Duke University

Advisor: Prof. MsC. Catherine Staton

Keywords: *Bayesian networks, Path analysis, Machine Learning*

### Master's in Computer Science - 1999 - 2002

Federal University of Rio Grande do Sul, UFRGS, Porto Alegre, Brazil

Advisor: Prof. Dr. Tiarajú Asmuz Diverio

Keywords: 1. Clusters. 2. Graphs 3.Partitioning

### Graduate in Applied Probability and Statistics - 2012 - 2014

State University of Maringá, UEM, Maringa, Brazil

Advisor: Prof. Dr. Terezinha Aparecida Guedes

### Graduate in Information Systems - 1996 - 1997

Universidade Estadual de Maringá, UEM, Maringa, Brazil

Advisor: Prof. Dr. Dalva de Oliveira Alves de Souza

### Undergraduate in Computing - 1989 - 1992

Associated Colleges of São Paulo, FASP, São Paulo, Brazil



## PROFESSIONAL EXPERIENCE

### State University of Maringá - 1997 - Current

Position: Computer Analyst Business Intelligence Analyst

Creation of dashboards with tables, graphs and key performance indicator

### State University of Maringá - 2019 – Current

Position: Full Professor

Evaluation Tools and Data Analysis (R/Rstudio), combination of scientific writing methods with IT and Machine Learning tools to implement the Research Improvement Program (RIP) Software development to support the Urgency and Emergency area

### University Center of Maringá - 1995 – 2013

Position: Full Professor

Systems Analysis, Application Programming, Operating Systems and Computer Networks

### Union of Superior Schools of the Ivaí Valley - 1996 - 2002

Position: Full Professor

Systems Analysis, Application Programming, Operating Systems

### DUKE University - 2008 - 2013

Scientific research coordinator and trainer

## BIBLIOGRAPHIC PRODUCTION

### Articles Published in Scientific Journals

1. CARVALHO, ECA.; VISSOCI, JOAO RICARDO NICKENIG; MACHADO, WAGNER DE LARA; PARAISO, EMERSON CABRERA; NIEVOLA, JULIO CESAR. BNPA: An R package to learn path analysis input models from a data set semi-automatically using Bayesian networks. KNOWLEDGE-BASED SYSTEMS. , v.223, p.107042 - , 2021. [doi:10.1016/j.knosys.2021.107042]
2. BITENCOURT, MARIÁ ROMANIO; HIZUKURI, TATIANA SAYURI; BITENCOURT, MARCOS ROGÉRIO; ALARCÃO, ANA CAROLINA JACINTO; CARVALHO, ECA.; PELLOSO, SANDRA MARISA; CARVALHO, MARIA DALVA DE BARROS. Variables Involved in The Management of School Bullying: A Bayesian Networks Analysis. REVISTA PAULISTA DE PEDIATRIA (ONLINE). , v.39, p.39:e201907 - , 2021.
- 3 ALARCÃO, ANA C.; DELL' AGNOLO, CÁTIA M.; VISSOCI, JOÃO R.; CARVALHO, ELIAS C.A.; STATON, CATHERINE A.; DE ANDRADE, LUCIANO; FONTES, KÁTIA B.; PELLOSO, SANDRA M.; NIEVOLA, JÚLIO C.; CARVALHO, MARIA D. Suicide mortality among youth in southern Brazil: a spatiotemporal evaluation of socioeconomic vulnerability. REVISTA BRASILEIRA DE PSIQUIATRIA. , v.42, p.46-53 - , 2019.
- 4.HERTZ, JULIAN T.; FU, TOMMY; VISSOCI, JOAO RICARDO; ROCHA, THIAGO AUGUSTO HERNANDES; Carvalho, Elias; FLANAGAN, BRENDAN; DE ANDRADE, LUCIANO; LIMKAKENG, ALEX T.; STATON, CATHERINE A. The distribution of cardiac diagnostic testing for acute coronary syndrome in the Brazilian healthcare system: A national geospatial evaluation of health access. PLoS One. , v.14, p.e0210502 - , 2019. [doi:10.1371/journal.pone.0210502]
- 5.ANDRADE, LUCIANO DE; LYNCH, CATHERINE; Carvalho, Elias; RODRIGUES, CLARISSA GARCIA; VISSOCI, JOÃO RICARDO NICKENIG; PASSOS, GUTTENBERG FERREIRA; Pietrobon, Ricardo; NIHEI, OSCAR KENJI; DE BARROS CARVALHO, MARIA DALVA. System Dynamics Modeling in the Evaluation of Delays of Care in ST-Segment Elevation Myocardial Infarction Patients within a Tiered Health System. Plos One. , v.9, p.e103577 - , 2014. [doi:10.1371/journal.pone.0103577]
6. DE ANDRADE, LUCIANO; VISSOCI, JOÃO RICARDO NICKENIG; RODRIGUES, CLARISSA GARCIA; FINATO, KAREN; Carvalho, Elias; Pietrobon, Ricardo; DE SOUZA, ENIUCE MENEZES; NIHEI, OSCAR KENJI; LYNCH, CATHERINE; DE BARROS CARVALHO, MARIA DALVA. Brazilian Road Traffic Fatalities: A Spatial and Environmental Analysis. Plos One. , v.9, p.e87244 - , 2014. [doi:10.1371/journal.pone.0087244]

7. CAPOBIANCO, DIRCE MARIA; BATILANA, ADELIA; GANDHI, MIHIR; Shah, Jatin; FERREIRA, RODRIGO; Carvalho, Elias; RIVERO, THIAGO STRAHLER; Pietrobon, Ricardo; ATALLAH, ÁLVARO NAGIB; DO PRADO, GILMAR FERNANDES. Surgical treatment of sleep apnea: Association between surgeon/hospital volume with outcomes. The Laryngoscope (St. Louis). , v.1, p.n/a - n/a, 2013. [<http://onlinelibrary.wiley.com/doi/10.1002/lary.24207/abstract>]
8. ANDRADE, LUCIANO DE; ZANINI, VANESSA; Batilana, Adelia Portero; CARVALHO, ELIAS CESAR ARAUJO DE; Pietrobon, Ricardo; NIHEI, OSCAR KENJI; DE BARROS CARVALHO, MARIA DALVA. Regional Disparities in Mortality after Ischemic Heart Disease in a Brazilian State from 2006 to 2010. Plos One. , v.8, p.e59363 - , 2013. [doi:10.1371/journal.pone.0059363]
9. WORN, MATHIAS; CASTLEBERRY, ANTHONY W.; CLARY, BRYAN M.; GLOOR, BEAT; Carvalho, Elias; JACOBS, DANNY O.; Pietrobon, Ricardo; SCARBOROUGH, JOHN E.; WHITE, REBEKAH R. Concomitant Vascular Reconstruction During Pancreatectomy for Malignant Disease. JAMA SURG. , v.148, p.331 - 338, 2013. [<http://archsurg.jamanetwork.com/article.aspx?articleid=1485562>]
10. CARVALHO, ECA.; Batilana AP; Wederson Claudino; Luiz Fernando Lima Reis; Shah J; Pietrobon R. Workflow in Clinical Trial Sites & Its Association with Near Miss Events for Data Quality: Ethnographic, Workflow & Systems Simulation. Plos One. , v.7, p.e39671 - , 2012.
11. WORN, MATHIAS; ØSTBYE, TRULS; Shah, Anand; Carvalho, Elias; SCHUDEL, INGE M.; SHIN, JIN HEE; Pietrobon, Ricardo; GULLER, ULRICH. High Risks for Adverse Outcomes After Gastric Bypass Surgery Following Failed Gastric Banding. Annals of Surgery. , v.1, p.1 - , 2012. [doi:10.1097/sla.0b013e3182683037]
12. TAN SB; KOH GCH; DING YW; MALHOTRA R; HA TC; Pietrobon R; KUSUMARATNA R; TIE R; Guilherme Cunha; MARTINS H; SEIM A; ALTERMATT F; BIDERMAN A; PUOANE T; CARVALHO, ECA.; ØSTBYE T. Inclination towards a research career among first year medical students: an international study. Asian Biomedicine. , v.5, p.49 - 59, 2012. [[http://seajme.md.chula.ac.th/articleVol5No2/OR5\\_SayBengTan.pdf](http://seajme.md.chula.ac.th/articleVol5No2/OR5_SayBengTan.pdf)]
13. Cofiel, Luciana; Zammar, Guilherme R; Zaveri, Amrapali J; Shah, Jatin Y; Carvalho, Elias; Nahm, Meredith; Kesselring, Gustavo; Pietrobon, Ricardo. A system dynamics analysis determining willingness to wait and pay for the implementation of data standards in clinical research. Health Research Policy and Systems. , v.8, p.38 - , 2010. [doi:10.1186/1478-4505-8-38]
14. Carvalho, Elias Cesar Araujo de; Jayanti, Madhav Kishore; Batilana, Adelia Portero; Kozan, Andreia M. O.; Rodrigues, Maria J.; Shah, Jatin; Loures, Marco R.; Patil, Sunita; Payne, Philip; Pietrobon, Ricardo; CARVALHO, ECA.; CARVALHO, ECA. Standardizing Clinical Trials Workflow Representation in UML for International Site Comparison. Plos One. , v.5, p.e13893 - , 2010. [doi:10.1371/journal.pone.0013893]
15. Shah, Jatin; Rajgor, Dimple; Vaghasia, Meenakshi; Phadtare, Amruta; Pradhan, Shreyasee; Carvalho, Elias; Pietrobon, Ricardo. WriteSim TCEexam - An open source text simulation environment for training novice researchers in scientific writing. BMC Medical Education. , v.10, p.39 - , 2010. [<http://www.biomedcentral.com/1472-6920/10/39>]
16. Carvalho, Elias César Araujo de; Batilana, Adelia Portero; Simkins, Julie; Martins, Henrique; Shah, Jatin; Rajgor, Dimple; Shah, Anand; Rockart, Scott; Pietrobon, Ricardo. Application Description and Policy Model in Collaborative Environment for Sharing of Information on Epidemiological and Clinical Research Data Sets. Plos One. , v.5, p.e9314 - , 2010. [doi:10.1371/journal.pone.0009314]

#### Articles Published in Annals of Events (complete)

1. Mauricion Uriona Maldonado; Pietrobon R; Gregorio Varvakis; Elias Carvalho. In: 30th International Conference of the System Dynamics Society, 2012, St Gallen. Proceedings of the 30th International Conference of the System Dynamics Society. St Gallen - Suíça: , 2012. [<http://www.systemdynamics.org/conferences/2012/proceed/papers/P1367.pdf>]
2. CARVALHO, ECA.; Batilana AP; Shah, Jatin; Rajgor D; Benjamin D; Pietrobon R. In: 6th St. Petersburg Workshop on Simulation, 2009, Saint Petersburg. Proceedings of 6th St. Petersburg Workshop on Simulation. Saint Petersburg: VVM com Ltd., 2009. v.I. p.355 – 361.
3. CARVALHO, ELIAS CESAR ARAUJO DE; Shah, Jatin; Shah, Anand; Montanha, Aleksandro; Pietrobon, Ricardo. Reengineering Clinical Research Teams: An Organizational Modeling Approach In: 2008 International Conference on Biomedical Engineering And Informatics (BMEI), 2008, Sanya. [<http://ieeexplore.ieee.org/abstract/document/4548740/>]
4. CARVALHO, ECA.; DORNELES, R. V.; RIZZI, R. L.; Diverio, T. A. In: WSCAD'2002 - Terceiro Workshop em Sistemas Computacionais de Alto Desempenho, 2002, Vitória, 2002.

## **Completed Orientations and Supervisions as Advisor**

### **Masters Dissertation**

1. Bruna Aparecida Polished. Prototype of the Application of information provided by the patient for times of urgency and emergency. 2022. Dissertation (Master in MANAGEMENT, TECHNOLOGY AND INNOVATION IN URGENCY AND EMERGENCY) - State University of Maringá
2. Maria Lucia da Silva Zuliani. System for Control and Management of the Equipment Center of the University Hospital of Maringá - CEHU. 2022. Dissertation (Master in MANAGEMENT, TECHNOLOGY AND INNOVATION IN URGENCY AND EMERGENCY) - State University of Maringá
3. Paula Abrante Lima Silva. InfoPA: An application to manage and deliver information about the flow of activities of patients from the Emergency Room to their companions. 2021. Dissertation (Master's in MANAGEMENT, TECHNOLOGY AND INNOVATION IN URGENCY AND EMERGENCY) - State University of Maringá
4. Daniela Álvares da Silva Matsumoto. ?KANBAN?: REAL-TIME INFORMATION OPTIMIZING PATIENT DESTINATION IN THE EMERGENCY CARE. 2021. Dissertation (Master's in MANAGEMENT, TECHNOLOGY AND INNOVATION IN URGENCY AND EMERGENCY) - State University of Maringá

### **Graduate Orientations as Advisor:**

1. Fabiane Tagliari. COMPUTATIONAL GRID. 2005. Monograph. (Post-Graduation in Network Config and Management) - Higher Education Center of Maringá
2. Douglas Bueno Fernandes. Linux Computer Cluster. 2005. 70 f. Monography. (Post-Graduation in Network Config and Management) - Cesumar Higher Education Center of Maringá
3. Humberto Casicava. Cluster of Computers in the Windows Environment. 2005. 80 f. Monography. (Post-Graduation in Network Config and Management) - Cesumar Higher Education Center of Maringá.
4. Fernando Henrique Bortolasci. DESIGN AND MANAGEMENT OF COMPUTER NETWORKS: STRUCTURED SYSTEMS IN COMPUTER NETWORKS. 2005. 52 f. Monography. (Post-Graduation in Network Config and Management) - Cesumar Higher Education Center of Maringá.
5. Linari Ruiz Balconi. Firewall in Organizational Environments. 2005. 80 f. Monography. (Post-Graduation in Network Config and Management) - Cesumar Higher Education Center of Maringá.

### **Undergraduate orientations as advisor:**

1. Marcelo Ribeiro Pereira. Basic configuration of CISCO routers. 2006. 0 f. Completion of course work. (Undergraduation in Computer Networks) - Cesumar Higher Education Center of Maringá.
2. Fabio Eduardo Valle. Implementation of wireless networks in restaurants. 2006. 0 f. Completion of course work. (Undergraduation in Computer Networks) - Cesumar Higher Education Center of Maringá.
3. Marcelo Gariani Raphael. Debian server for Sicredi de Maringá activities. 2006. 0 f. Completion of course work. ( Undergraduation in Computer Networks) - Higher Education Center of Maringá.
4. Thiago Fernando Minella Ribeiro. Distance education: An analysis of the Moodle software. 2006. 0 f. Completion of course work. ( Undergraduation in Computer Networks) - Cesumar Higher Education Center of Maringá.

**Obs: More detailed information can be obtained in my Brazilian Lattes Curriculum at:**

**<https://lattes.cnpq.br/4248328961021251>**