Antonio Marcos Alberti

PORTFOLIO

h.D. in Electronics and Telecommunications, Engineer, Associate Professor, Researcher, Author, Developer, Scientist, Keynote, Coordinator, Manager, Consultant, Digital Artist and Event Organizer.



Antonio Marcos Alberti

IN SHORT

- Electrical Engineering from Federal University of Santa Maria, RS (1995).
- Master and Ph.D. in Electronics and Telecommunications from FEEC/ Unicamp, SP (1998 and 2003).
- Postdoc from Electronics and **Telecommunications Research** Institute (ETRI), Daejeon, South Korea (2012).
- Associate Professor at National Telecommunications Institute (2004 up to now).
- Coordinator of ICT Lab at Inatel (2013 up to now).

ntonio Marcos Alberti is an emerging figure in the field of technology, with extensive experience in engineering, programming, and research. He is currently the coordinator of the Information and Communication Technology (ICT) Laboratory at Instituto Nacional de Telecomunicações (INATEL) and is known for his significant contributions in the field of technological convergence and the disruptions it causes in the transformation of society.

He has authored over 120 scientific papers, contributing to the definition of the requirements for the Internet of the Future in South Korea and coordinating the softwarization goal of the Brazil 6G Project. Additionally, he is the creator of the NovaGenesis convergent information architecture, having implemented its first prototype with over 150,000 lines of code. Alberti is a pioneer of the Internet of the Future (post-IP) and a designer of 6G/xG.

Alberti is also a networked social entrepreneur, having founded the Renascidade movement, which aims to create innovative solutions for social problems through technology. He is frequently invited to give lectures on technology and its disruptions and is a prominent consultant in the technology sector.

@ANTONIOMARCOSALBERTI @



The state of the s

NOVAGENESIS IOT: 2017



NOVAGENESIS DEMO FOR TV: 2014

LAB ACTIVITIES

Over the past 11 years, Alberti has conducted numerous hands-on activities in Inatel's ICT lab, a facility he founded in 2013. These activities included preparing demonstrations, welcoming visitors, conducting experiments, holding team meetings, hosting journalists, and much more. Experimental activities have also been performed at ETRI, Daejeon, South Korea, during Alberti's sabbatical year.

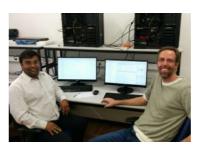


DEMO AT ICT LAB, 2023





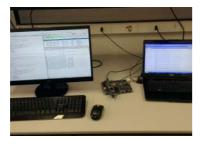




















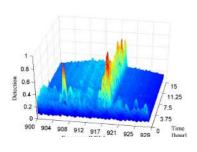


























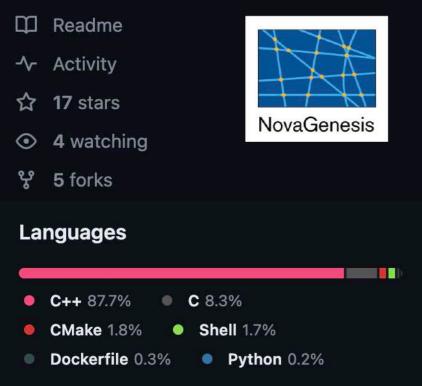








NG is a convergent information processing, storage and exchanging architecture. Its design started in 2008, when Prof. Antônio Marcos Alberti selected project requirements, design principles, guidelines and main foundations. Alberti also did its first specification in 2011 and coded this prototype in C/C++ in 2012-2013. The key idea of NovaGenes...



DEVELOPER

I am a self-taught person who started computer programming in the 80s, when I was still a teenager. I advanced in several languages, IDEs, to the point of developing the prototype of the NovaGenesis (NG) project and in C++/C. In addition to NG, I developed several other programs, such as a discrete event simulator, models for ATM networks, Leaky Bucket traffic policer, PDFAnalyzer, etc.



ANTONIOALBERTI/NOVAGENESIS

Programming Languages

• C++, C, basic Python and shell script.

IDEs

• Eclipse, Clion, MS visual studio.

Text edition

 MS Word, Latex, Pages, Atom, LibreOffice writer, etc.

Slides tools

MS Powerpoint, Keynote,
 LibreOffice Impress, Canva, etc.

Spreadsheet tools

• MS Excel, Numbers, LibreOffice Calc.

Math/Sim tools

 Matlab, Gnuplot, Mathcad, Python Math, Simplex, Arena, Opnet, Simulink, etc.

Al tools

• Midjourney, ChatGPT, Fliki, Writefull.

Database

• MySQL

Wallets and Exchanges

• Exodus, Bitso, Binance, MetaMask, Jaxx Liberty, Trinity, etc.

Virtualization and File Mngt

 VirtualBox, Docker, Mininet, Cooja, FloTE3, Dropbox, OneDrive, Google.

Productivity and Project Mngt

 Github, JIRA, Trello, MS Project, Slack, Discord, Skype, Google Docs, Zoom, Mural, Evernote, Pocket, Anaconda, MS Teams, Zotero, Waalaxy, Zapier, VLC, iMovie, GoToMeeting, Acrobat, etc.

TECHNICAL SKILLS

Link layer

• Ethernet, Wi-Fi, ATM, MPLS, IEEE 802.15.4, LoRa, PPP, MAC, WDM, SONET/SDH, xDSL, PON, etc.

Internet

IPv4, IPv6, TCP, UDP, SIP, RSVP,
 HTTP, MQTT, CoAP, FTP, Telnet,
 SNMP, DNS, RPL, ARP, ICMP, IGMP,
 RIP, OSPF, BGP, MOSPF, IntServ,
 DiffServ, RTP, RTCP, RSTP, HIP,
 MEGACO, NGN, IPTV, etc.

Mobile

LTE/SAE, IMS, C-RAN, O-RAN,
 Open RAN, E-RAN, MANO, 5G
 Core, 5G Access, 6G design.

Future Internet

 XIA, RINA, NDN, MobilityFirst, NovaGenesis, Akari, MOFI, ICN, SCN, SDN, ID/LOC split, FIBRE, 4WARD, CASCADAS, PSIRP, PURSUIT, SENSEI, FIWARE, etc.

Concepts & Paradigms

NFV, SDN, ICN, IDN, SOA, SON,
 3DNETS, CDN, AI, AGI, AR, CBDC,
 CR, D2D, DApps, DLT, DSA, DT,
 E2E, eMBB, HAP, IBN, INC, IoT, IT,
 KPI, MEC, ML, mMTC, mmWave,
 Slicing, NTN, OWC, QC, QAC, QI,
 QoS, RFID, RIS, SEN, UAV, UE,
 uRLLC, VLC, VNF, VR, XR, Bitcoin,
 Ethereum, Smart Contract, IOTA,
 Decentralized Networking, etc.

Tools

• Wireshark, TCP dump, Iperf.

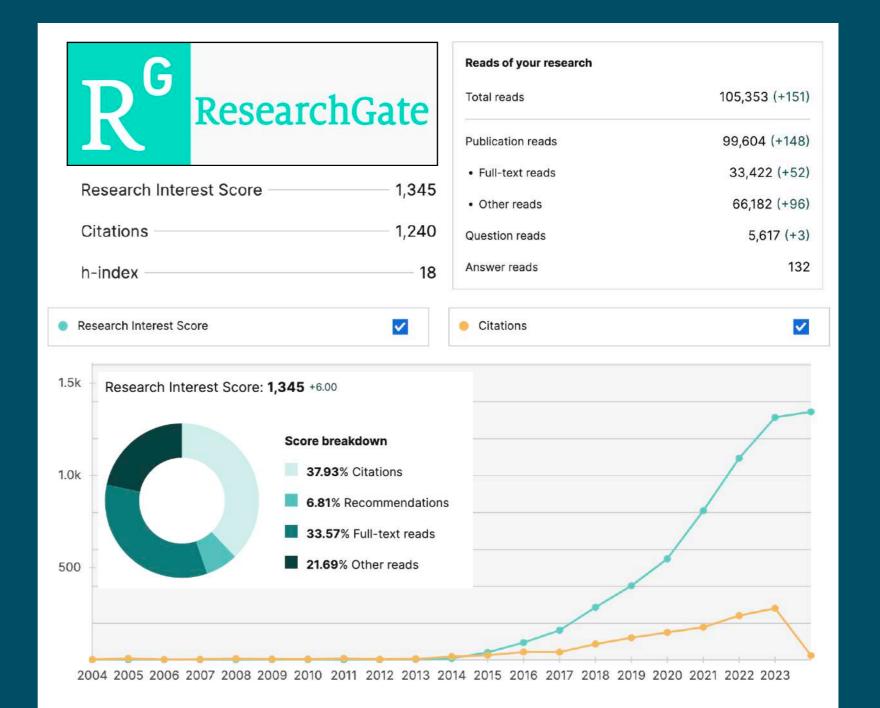
Forum activities

- Contributed to the requirements document for the Internet of the Future in South Korea.
- Contributed to the architecture of the Brazil 6G Project.

PROTOCOLS, STACKS, NETWORKING

SCIENTIFIC RESEARCH

Alberti has published more than 120 papers in conferences, workshops and journals during the last 25 years as a researcher.



Total number of publications according to Scopus: 63; H-Index = 14; Citations = 823.

Total number of publications according to Google Scholar: 143; H-Index = 18; Citations = 1615.

Total number of publications according to Web of Science: 54; H-Index = 11; Citations = 523.

Total number of publications according to ResearchGate: 159; H-Index = 18; Citations = 1240.

Total number of publications according to ORCID: 76

SCIENTIFIC RESEARCH

In recent years, it is possible to see that a smaller number of articles have had an increasingly greater impact. 2024 was just in the beginning when this slide was done.

Web of Science Core Collection metrics

Citation counts are from Web of Science Core Collection.

54

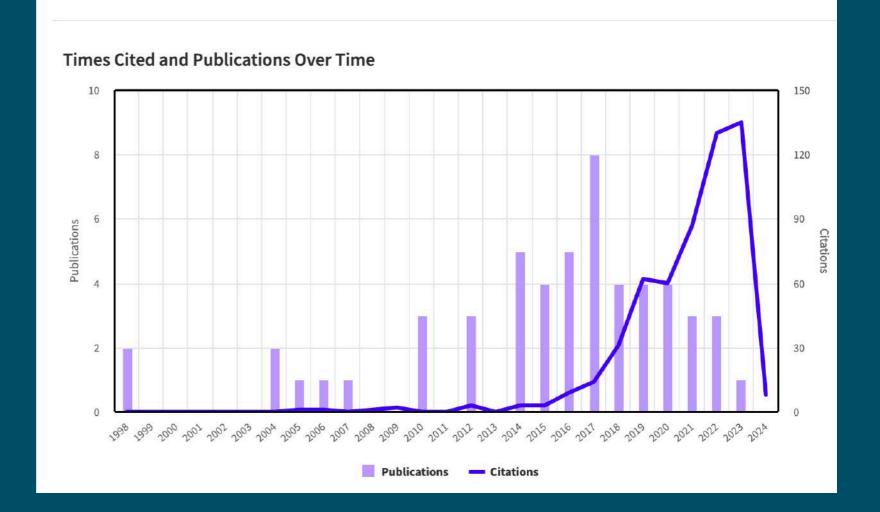
550

12

Publications in Web of Science

Sum of Times Cited H-Index





A Detailed Relevance Analysis of Enabling Technologies for 6G Architectures

Jan 2023 · IEEE Access PP(99):1-1 DOI: 10.1109/ACCESS.2023.3301811 License - CC BY-NC-ND 4.0

Lab: ICT Lab

- Diego Pivoto . Tibério Tavares Rezende .
- Michelle Facina . Show all 12 authors .
- Antonio Marcos Alberti

Research Interest Score	5.8
Citations	0
Recommendations	2
Reads (i)	158

Convergence of Distributed Ledger Technologies with Digital Twins, IoT, and Al for fresh food logistics: Challenges and opportunities

Sep 2022 · Journal of Industrial I... 31(2):100393 DOI: 10.1016/j.jii.2022.100393

- 😩 Jonas Lopes Vilas Boas 🦹 Joel Rodrigues -
- Antonio Marcos Alberti

Research Interest Score	28.3
Citations	36
Recommendations	3
Reads (i)	529

Toward Future Internet of Things **Experimentation and Evaluation**

Jun 2022 - IEEE Internet of Thin... 9(11):8469 - 8484 DOI: 10.1109/JIOT.2021.3114540

- & Thiago Bueno Ramon P. dos Santos Chaib -Arismar Cerqueira Sodré Junior - Show all 5 authors -
- Antonio Marcos Alberti

Research Interest Score	17.3
Citations	11
Recommendations	8
Reads (i)	607
	Learn about stats on ResearchGate

Toward Next-Generation and Service-Defined Networks: A NovaGenesis Control Agent for **Future Internet Exchange Point**

May 2022 · IEEE Network 36(3):74-81 DOI: 10.1109/MNET.008.2100555

Lab: ICT Lab

- 🏝 Thiago Bueno 😂 Fabio L. Verdi -
- Juliano Coelho Goncalves de Melo Show all 6 authors
- Antonio Marcos Alberti

Research Interest Score	2.7
Citations	0
Recommendations	1
Reads ①	134

A Tutorial on Trusted and Untrusted non-3GPP Accesses in 5G Systems - First Steps **Towards a Unified Communications** Infrastructure

Jan 2022 - IEEE Access PP(99):1-1 DOI: 10.1109/ACCESS.2022.3219829

License - CC BY 4.0

🌒 Mario Lemes - 🌒 Antonio Marcos Alberti -Cristiano Bonato Both . Show all 5 authors . Kleber Vieira Cardoso

Research Interest Score Citations Recommendations

APTM: A Model for Pervasive Traceability of Agrochemicals

Sep 2021 - Applied Sciences 11(17):8149 DOI: 10.3390/app11178149 License - CC BY 4.0

- Emiliano Soares Monteiro Rodrigo Da Rosa Righi -2 Jorge Barbosa - 2 Antonio Marcos Alberti
- 8.3 Research Interest Score Citations Recommendations Reads ① 83

Cyber-physical systems architectures for industrial internet of things applications in Industry 4.0: A literature review

Dec 2020 - Journal of Manufact... 58(Part A):176 DOI: 10.1016/i.imsv.2020.11.017

- 🗿 Diego Pivoto 🌑 Luiz Felipe Fernandes -
- Rodrigo Da Rosa Righi Show all 6 authors -Antonio Marcos Alberti

Research Interest Score	217.4
Citations	225
Recommendations	9
Reads ①	4,772

Mission-Critical, Control Networks and Smart Grid Teleprotection: Key Aspects, Technologies, and Study of Cases

Sep 2020 - IEEE Access 8

DOI: 10.1109/ACCESS.2020.3025235

- Luiz Felipe Fernandes Q Jose Rodrigo Santos -
- Luiz Augusto Melo Pereira Show all 9 authors -
- Antonio Marcos Alberti

Research Interest Score	27.4
Citations	28
Recommendations	4
Reads ①	1.482
	1.4

License - CC BY 4.0 Lab: ICT Lab

Research Interest Score	27.4
Citations	28
Recommendations	4
Reads ①	1.482

Platforms for Smart Environments and Future Internet Design: A Survey

Oct 2019 - IEEE Access PP(99):1-1 DOI: 10.1109/ACCESS.2019.2950656 License - CC BY 4.0

Antonio Marcos Alberti - Mateus A. S. Santos -Ricardo Souza - Show all 7 authors - 🦹 Joel Rodrigues

Research Interest Score	28.2
Citations	32
Recommendations	10
Reads ①	833

THE MOST RELEVANT **PAPERS**



14.2

A Study on Some Industry 4.0 Key Technologies

Aug 2020 - ICIC Express Letters 11(8):713-720 DOI: 10.24507/icicelb.11.08.713

Alexandre Baratella Lugli .

Antonio Marcos Alberti . Tales Cleber Pimenta - & Thiago Bueno

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12
510

NovaGenesis Applied to Information-Centric,

Control Plane and Spectrum Management

Service-Defined, Trustable IoT/WSAN

Antonio Marcos Alberti - Marília Martins Bontempo -

Jose Rodrigo Santos · Show all 5 authors ·

Sep 2018 · Sensors 18(9):3160

DOI: 10.3390/s18093160

Rodrigo Da Rosa Righi

Research Interest Score

Citations

Reads ①

License - CC BY 4.0

Blockchain Applied to Vehicular Odometers

Jan 2020 · IEEE Network 34(1):62-68 DOI: 10.1109/MNET.001.1900162

Lucas R. Abbade - Prilipe M. Ribeiro - Matheus H. da Silva -Show all 8 authors - 3 Joel Rodrigues

Research Interest Score	15.8
Citations	28
Recommendations	6
Reads ①	181
	Learn about stats on ResearchGate

Advancing NovaGenesis Architecture **Towards Future Internet of Things**

Jul 2017 - IEEE Internet of Thin... PP(99):1-1 DOI: 10.1109/JIOT.2017.2723953

- Antonio Marcos Alberti Gabriel Dias Scarpioni -Vaner J. Magalhaes - Show all 6 authors -
- Rodrigo Da Rosa Righi

9.9

387

Research Interest Score 23.3 34 Recommendations Reads (i) 521

Naming and name resolution in the future internet: Introducing the NovaGenesis approach

Sep 2016 - Future Generation C... 67 DOI: 10.1016/j.future.2016.07.015

Antonio Marcos Alberti - Marco Aurelio Favoreto Casaroli -Dhananjay Singh - Rodrigo Da Rosa Righi

Research Interest Score	15.4
Citations	30
Recommendations	1
Reads (i)	1,567

Cognitive radio in the context of internet of things using a novel future internet architecture called NovaGenesis

Aug 2016 . Computers & Electri... DOI: 10.1016/j.compeleceng.2016.07.008

- Antonio Marcos Alberti Daniel Mazzer -M.M. Bontempo - Show all 6 authors -Arismar Cerqueira S. Jr.
- Research Interest Score

Citations 35 Recommendations Reads ① 85 Learn about stats on ResearchGate

Implementation of an Optical-Wireless Network with Spectrum Sensing and Dynamic Resource Allocation Using Optically Controlled Reconfigurable Antennas

Apr 2014 - International Journal of Antennas and Propagation 2014(2014) . Follow journal DOI: 10.1155/2014/670930

License - CC BY

- & Egídio Raimundo Neto @ Jeferson Rosa -
- Marco Casaroli · Show all 6 authors · Arismar Cerqueira S. Jr.
- Research Interest Score 7.8

Citations Recommendations



BEST PAPER: ESAASA 2015



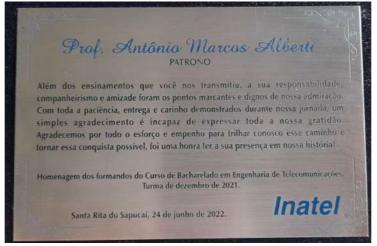
BEST PAPER: SBCUP 2021



BEST PAPER: WPEIF 2020



TELECOM HONORED TEACHER: 2022



TELECOM CLASS PATRON: 2022



BEST PAPER: WPEIF 2021



TELECOM HONORED TEACHER: 2022



ADINATEL: 2023

AWARDS



BEST PAPER: WPEIF 2022



FUTURE TECHNOLOGIES AND IMPACTS



TEACHING ABOUT 6G

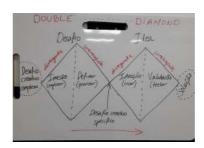
TEACHING & TRAINING

With 20 years of teaching experience in undergraduate, master's, and doctoral courses, I have worked on the evolution and reinvention of curricula and courses in telecom and computer engineering, as well as telecom master's and Ph.D. disciplines. Topics include an overview of computing and telecom, starting with foundational concepts in computing history, digital systems, and teleprocessing. The curriculum progresses through detailed studies on network technologies, including data communication protocols, electrical measurements, and the theoretical underpinnings of telecom such as queuing theory and linear optimization. Advanced topics cover a wide array of network technologies and systems, including TCP/IP, MPLS, NGN, IPTV, SDN/NFV, IoT with a particular focus on the quality of service, multimedia systems, and other emerging techs. At the postgraduate level, the emphasis shifts to specialized areas such as advanced networking, mobile communications (5G/6G), performance analysis, and the integration of cutting-edge technologies in telecommunications with edge/cloud computing.

































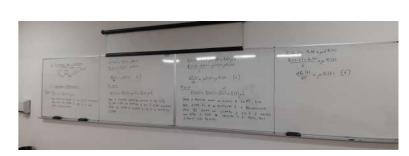
















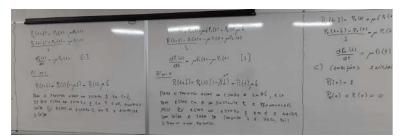














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TOMORROW'S FORUM: 2022, 2023



HACKTOWN: 2016 -2023

KEYNOTES

Antonio M. Alberti has delivered over 60 lectures on technology and its disruptions, including events HackTown, Futurecom, Exponential Conference, QCon, TEDxInatel, Singularity University Brazil Chapter, Pint of Science, Ciência no Boteco, The Developer Conference, São Paulo Technology Week, CASE, etc. These are some of the most important events in Brazil in technology and innovation. Alberti has also given tutorials and lectures at dozens of scientific conferences in Brazil and abroad.



TEDXINATEL: 2013



TALKING TO KIDS: 2023



IOT + AI + UX: 2015



SAO PAULO TECH WEEK: 2019



FUTURE INTERNET SEMINAR: 2014-2016



FEEC/UNICAMP: 2023



QCON: 2014



FUTURECOM: 2009, 2011, 2014, 2018



BANK OF BRAZIL: 2014



SMART CITIES SAO PAULO: 2015



AND INNOVATION: 2015



NAVAL CLUB RIO DE JANEIRO: 2018-2019



NETCOM: 2019



BRAZIL/KOREA FORUM: 2014, 2015, 2016



DEVRY UNIVERSITY: 2019



ORBI CONECTA BH: 2019



SINGULARITY UNIV. RJ: 2021



6G FORUM PORTO ALEGRE: 2021 E 2022



ART AND THINKING: 2018



INTERACTION: 2022



BRAZIL CHAMBER OF DEPUTIES: 2019



































OTHER EVENTS































LEADING TEAMS

Since earning my master's degree in telecommunications from 1996 to 1998, I have led teams in both research and development, executing projects with companies such as Ericsson, SES, Viasat, etc. In all these activities, I consistently utilized appropriate tools, including Trello, JIRA, MS Project, Excel, etc. Leading is setting an example. It's about taking care of the details. It is about cultivating values such as belonging, reciprocity, ancestry, and empathy. It's about facilitating team growth.



























































PANELS

Alberti has participated in panels at HackTown, Futurecom, Exponential Conference, Pint of Science, Ciência no Boteco, Future Internet Seminar, TIM Talks, Arte e Pensamento, Fórum do Amanhã, ITK, 5G Data Center, Expoinovação, Inforuso, IoT Brasil, 5G LATAM, Forum Brazil/Korea, Telebrasil, Netcom, Cloudscape, SBRC, etc.





























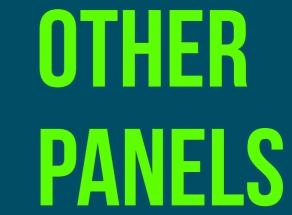




























SOUTH KOREA

From March 2012 to February 2013, I had the opportunity to serve as a visiting researcher at ETRI (Electronics and Telecommunications Research Institute) in Daejeon, South Korea. My wife, five-year-old son, and two-monthold daughter moved there with me. At ETRI, I was part of the Future Internet department. During this time, I developed NovaGenesis from an idea into a specification, and subsequently into C++/C code. The ultimate goal was to implement NovaGenesis on the Korean MOFI (Mobile Future Internet) initiative within the 10 Gbps Korean network. We obtained preliminary results from NovaGenesis in this setting. It was an enriching experience that spanned cultural, professional, and environmental dimensions.































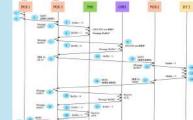


VISITING RESEARCHER









EVENT ORGANIZATION

I participated in the co-creation of dozens of technical, scientific, multidisciplinary events and science outreach alongside names such as Joana Mao, Marcos David, Lala Deheinzelin, Ligia Zotini, Ivan Kallas, Ralph Peticov, Silvio Meira, Estevan Lopes, etc. Events featuring multidisciplinary experiences such as: 6G 64C - 6G for Creative, Collaborative Cities and for the Common Good, Creativity and Purpose, Swarms of Future Value, NovaGenesis: Art & Tech at Hacienda 847, among many others.































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Pesquisador do Sul de Minas trabalha para construir 'nova internet'

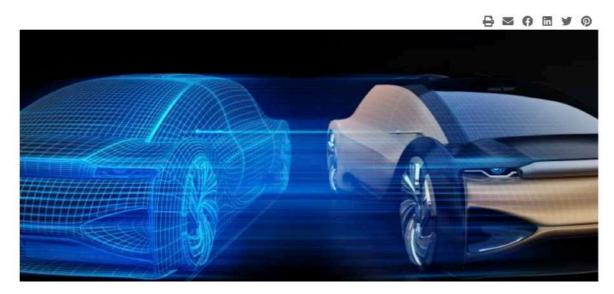
Projeto "NovaGenesis" é desenvolvido no Inatel em Santa Rita do Sapucaí. Experimentos foram feitos em parceria com universidade da Coréia do Sul.



A internet provocou uma revolução na forma com que as pessoas se comunicam em todo o mundo. A rede mundial de computadores transformou o planeta em uma grande aldeia global, onde informações em forma de texto, vídeo ou foto, circulam livremente em questão de segundos. No entanto, quase duas décadas após a internet começar a ser difundida e virar o fenômeno que conhecemos hoje, pesquisadores trabalham para desenvolver do

Recomendar 1 mil

O que podemos esperar dos gêmeos digitais? Como esse conceito afeta a indústria de telecomunicações?



ON THE NEWS

Alberti has been a columnist for the website Engenharia É, Olhar Digital, and Futurecom Digital, where he has written numerous articles. In addition, he has given dozens of interviews to news portals such as G1, Telebrasil, Jornal O Vale da Eletrônica, Clube de Engenharia, Al News, etc.

CATEGORIA: ENGENHARIA DISRUPTIVA



Novos Renascimentos: Cinquenta Tons de Homens e Máguinas

Antonio Marcos Alberti • 9 de março de 2023

Talvez a primeira coluna que escrevi para divulgar ciência foi no Engenharia É, mais especificamente para a coluna Engenharia Disruptiva,...



Computação Quântica: Como Funciona?

Antonio Marcos Alberti + 6 de março de 2020

Segundo McGeoch et al. [1], o computador quântico da D-WAVE funciona da seguinte forma: "Na natureza os sistemas sempre buscam...





INTERVIEWS

Interviews, features, experiences, media highlights: Alberti has spoken to various TV channels, including Globo, Canal Rural, GloboNews, etc. He has participated in several Podcasts, among them Dedi Prosa, Record 15 min, and Rock Night. Among the topics explored are: Smart Cities, Metaverses, 6G, Future Internet.

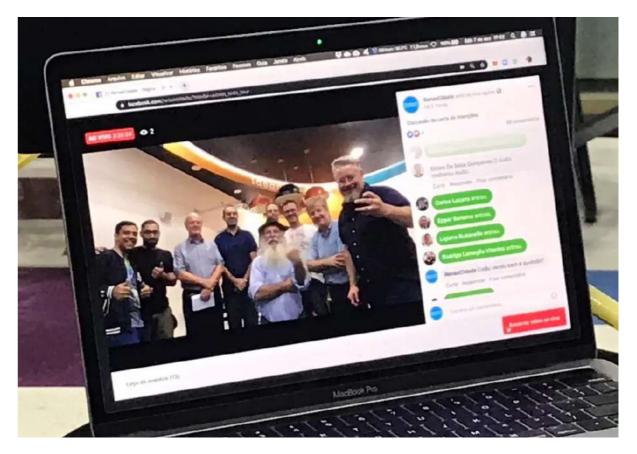




ENTREPRENEURSHIP

Alberti was the creator of the Renascidade movement, which aims to provide opportunities for expanding the level of consciousness, the rebirth of cities, through systemic balance and ethics, in order to generate happiness with sustainability and prosperity. It is a group of people who adopt holacratic governance to rethink city models and create transformative experiences and projects.





WRITER

n "New Renaissances," the scientist, professor, programmer, and information technology architect, Antônio Marcos Alberti, analyzes the impacts of technological convergence and its disruptions on the transformation of society. The goal is to understand how accelerated technological evolution affects individuals, families, organizations, cities, nations, and humanity, exploring the challenges that new technologies pose to

established models. The impacts of the convergence of over a hundred technologies are examined, providing a broad and in-depth diagnosis of the digital, social, cultural, systemic, creative, and collaborative transformations we are already experiencing.

The book is being translated to English right now.

ANTÔNIO M. ALBERTI

NOVOS RENASCIMENTOS

IMPACTOS DA TECNOLOGIA NA TRANSFORMAÇÃO COMPLETA DA SOCIEDADE



WEB SITE



Antonio Marcos Alberti

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