Eduardo S. Gama

Curriculum Vitae

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Sumary

Description I am a Computer Scientist with Bachelor and Master degree in Computer Science from the Federal University of Paraíba in 2015 and 2017, respectively. Currently, I am a Ph.D. student in Computer Science at the Institute of Computing from the University of Campinas (UNICAMP). My current research and development interests are in the web develpment, multimedia networks, Quality of Experience for edge/cloud computing fields. The development of a video storage, transmission and exhibition system in WebRTC, HLS and DASH protocols stands out as a result of these researches, offering voice and video communication solutions to a large global customer base.

Education

2017–Current **PhD. in Computer Science**, *University of Campinas*, Campinas/São Paulo, Brazil.
with Inter-University Exchange in Carleton University, Ottawa, Canada
Supervisor: Dr. Prof. Luiz Fernando Bittencourt (`http://lattes.cnpq.br/8269779905235226`)
Co-Supervisor: Roger Immich Kreutz (`http://lattes.cnpq.br/0535777592588490`)

2015–2017 **M.Sc. in Informatics**, *Federal University of Paraíba*, João Pessoa/Paraíba, Brazil.
Supervisor: Dr. Prof. Iguatemi Eduardo da Fonseca (`http://lattes.cnpq.br/4519016123693631`)

2010–2015 **Bachelor Of Computer Science**, *Federal University of Paraíba*, João Pessoa/Paraíba, Brazil.
Supervisor: Dr. Prof. Iguatemi Eduardo da Fonseca (`http://lattes.cnpq.br/4519016123693631`)

Technical skills

Backend C/C++, Java, Python, Node.js

Frontend Javascript, CSS, HTML, React

DevOps Docker, Docker Compose, Kubernetes, Azure

Databases PostgreSQL, MySQL, MongoDB

Extra ns-3, Git, WebRTC, MPEG-DASH, HLS, ffmpeg, Microservices

Periodical Reviewer

2018-Current Journal: **Computers & Electrical Engineering**

2021-Current Journal: **Annals of Telecommunications**

Work Experience

2020-2021 **Researcher and Developer**, *Wisecare*, Rio de Janeiro, Brazil.

- R&D project which aims to optimize the experience of spectators of broadcasts of sporting and musical events, increasing the immersion possibilities of users by allowing them to share their acoustic spaces.

2020 **Visiting Researcher**, *Carleton University*, Ottawa, Canada.
- Development of part of my doctoral research with international collaboration from Prof. Dr. Fei Richard Yu (`https://www.csit.carleton.ca/~fyu`).

2015-17 **Researcher and Developer**, *Federal University of Paraíba*, João Pessoa, Brazil.
- R&D project financed by the RNP (Rede Nacional de Ensino e Pesquisa) aimed to develop techniques and applications to enforce Internet and Computer Security, focusing on DDoS attacks protection.

2014–2015 **Intern in software development**, *Dynavideo*, João Pessoa, Brazil.
- Developmed a system that allows the creation of 4K video streaming sessions. The platform is aimed at transmitting surgical procedures to medical students.
- Development of LabTVDI web. One application that enables the storage, exchange, retrieval via data streaming on demand, as well as the execution of Interactive Digital TV applications.

2013–2014 **Student of scientific initiation**, *Federal University of Paraíba*, João Pessoa, Brazil.
- Researcher on the topic of Computational Security.

Experience teaching or related

1s2018 **Partial Teaching Support Activities**, *University of Campinas*, Campinas, Brazil.
Discipline: Algorithms and Computer Programming.

2s2018 **Integral Teaching Support Activities**, *University of Campinas*, Campinas, Brazil.
Discipline: Data Structures.

Research Project

2021–Current **Application Orchestration and Allocation for Edge Computing**, *This project is funded by Ericsson.*
The main objective of this project is to architect and develop a data/compute placement controller in the device-edge-cloud continuum. The controller should allow the attachment of resource allocation policies and the study of objective functions and optimization techniques that enable the investigation of existing trade-offs among latency, network utilization, and application response times.

2017–2019 **FUTEBOL:Federated Union of Telecommunications Research Facilities for an EU-Brazil Open Laboratory**, *This project is funded by the Rede Nacional de Ensino e Pesquisa - the agency responsible for the Brazilian IP-Network.*
The overall objective of the FUTEBOL project is to develop and deploy research infrastructure, and an associated control framework for experimentation, in Europe and Brazil, that enables experimental research at the convergence point between optical and wireless networks.

2015–2017 **MORFEUS: Metro Networks Based on Multi-Band Orthogonal Frequency-Division Multiplexing Signals**.
The overall goal of the MORPHEUS project is to demonstrate the new paradigm associated with increasing the flexibility and granularity of transmission capacity allocation in optical networks

2015–2016 **GT-ACTIONS: Computational Framework for the Mitigation of Denial of Service Attacks**, *This project is funded by the Rede Nacional de Ensino e Pesquisa - the agency responsible for the Brazilian IP-Network.*
The project aims to design a computational platform called ACTIONS for real-time identification and treatment of Distributed Denial of Service (DDoS) attacks. In addition, due to the large capacity to change DDoS attacks, which assume new characteristics, it is intended to develop a methodology to quickly adapt the algorithms for the treatment of new versions of attacks

2013–2014 **Computational Security Techniques in Intelligent Electrical Networks**.
The project aims to study possible vulnerabilities that may occur in cyber security and privacy issues in smart grids and to propose Computational techniques to protect customers and companies involved

2012 **Heritage Memory and Interactivity**.
The Heritage, Memory and Interactivity (PAMIN) project proposes a social and technological approach to the issues related to the storage, cataloging and dissemination of space-time information on artistic and cultural manifestations that make up the material and immaterial cultural heritage that represent the cultural diversity of the Brazil.

List of Publications

1. M. C. Araujo E. S. Gama D. G. Gomes M. V. S. Silva R. K. Immich E. R. M. Madeira L. F. Bittencourt P. F. Prado, M. L. M. Peixoto. Mobile edge computing for content distribution and mobility support in smart cities. *Mobile Edge Computing. 1ed.New York: Springer*, v. 1, p. 1-30, 2021

2. Flavia Pisani, Fabiola M. C. de Oliveira, Eduardo S. Gama, Roger Immich, Luiz F. Bittencourt, and Edson Borin. Fog computing on constrained devices: Paving the way for the future iot. *Advances in Parallel Computing. 1ed.Amsterdam: IOS Press*, v. 35, p. 22-60, 2020

3. E. S. Gama, R. Immich, and L. F. Bittencourt. Towards a multi-tier fog/cloud architecture for video streaming. In *2018 IEEE/ACM International Conference on Utility and Cloud Computing Companion (UCC Companion)*, pages 13–14, Dec 2018

4. C. A. Astudillo, T. P. C. de Andrade, E. S. Gama, L. F. Bittencourt, L. A. Villas, E. R. M. Madeira, and N. L. S. da Fonseca. Internet of things for environmental monitoring based on radio over fiber. In *2018 IEEE 4th International Forum on Research and Technology for Society and Industry (RTSI)*, pages 1–6, Sep. 2018

5. P. Marques, A. P. do Carmo, V. Frascolla, C. Silva, E. D. R. Sena, R. Braga, J. Pinheiro, C. A. Astudillo, T. P. C. de Andrade, E. S. Gama, L. F. Bittencourt, L. A. Villas, E. R. M. Madeira, N. L. S. da Fonseca, C. Both, G. Lando, M. Schimuneck, J. Wickboldt, A. P. V. Trevisan, R. de Jesus Martins, R. F. Vassallo, F. M. de Queiroz, R. Picoreti, R. L. Gomes, C. K. Dominicini, V. García, R. S. Guimarães, R. Villaca, M. Martinello, M. R. N. Ribeiro, D. F. Macedo, V. F. Silva, J. C. T. Guimarães, C. Colman-Meixner, R. Nejabati, D. Simeonidou, Y. Zhang, F. Slyne, P. Alvarez, D. Collins, M. Ruffini, L. A. DaSilva, and J. M. Marquez-Barja. Optical and wireless network convergence in 5g systems – an experimental approach. In *2018 IEEE 23rd International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, pages 1–5, Sep. 2018

6. E. S. Gama, I. E. Fonseca, C. M. O. Araujo, R. C. Almeida, T. M. F. Alves, J. P. F. Rosario, and A. V. T. Cartaxo. Uso de aspectos da topologia virtual no problema rwba em redes opticas metropolitanas mb-ofdm. In *XXXIV Simpósio Brasileiro de Redes de Computadores e Sistemas Distribuídos (SBRC)*, pages 311–321, May. 2016

7. I. E. Fonseca, E. S. Gama, C. M. Oliveira, R. C. Almeida, T. M. F. Alves, J. P. F. Rosário, and A. V. T. Cartaxo. The new problem of routing, wavelength and band assignment in mb-ofdm metropolitan networks. In *2015 SBMO/IEEE MTT-S International Microwave and Optoelectronics Conference (IMOC)*, pages 1–5, Nov 2015

Software

SeVen A prototype with a selective defense for mitigating application-layer DDoS

Patents and Registrations of Computer Programs

6. Gama, E. S.; Sampaio, G. B. ; Fonseca, I. E. ; Lemos, M. O. O. ; Ribeiro, M. R. N. ; Nigam, V.. **SeVen: A prototype with a selective defense for mitigating application-layer DDoS.** 2017. Patent: Computer software. Registration number: BR512016001750-3, registration date: 04/04/2017. Registration institution: INPI - Instituto Nacional da Propriedade Industrial.

Interests

- Computer networks
- Fog/Cloud Computing
- Multimedia Distributed Systems
- Distributed Systems
- Internet of Things
- Smart Cities