Guilherme IECKER RICARDO

Postdoctoral Researcher in Computer Science

Personal Information

Date of Birth :	June 4th, 1991
Place of Birth :	São Gonçalo, Rio de Janeiro, Brazil
Nationality :	Brazilian
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Academic Background

Ph.D. in Computer Science 09/2018 – 08/2021
Université Côte d'Azur Sophia Antipolis, France

Thesis Title:	Design and Optimization of Cache Systems for Small-Cell Networks
Host Institutions:	EURECOM, Communications Systems Department (Primary)
	Inria Sophia Antipolis – Méditérranée, NEO Team
Supervision:	Dr. Giovanni Neglia (Inria, France)
	Dr. Petros Elia (EURECOM, France)
	Dr. Thrasyvoulos Spyropoulos (EURECOM, France)

Defended on 09/09/2021 in front of the following jury:

Reviewers

Dr. Anastasios Giovannidis	Researcher at CNRS LIP6, France
Dr. Francesco de Pellegrini	Full Professor at Université d'Avignon, France

Examiners

Dr. Ilenia Tinnirello (President)	Associate Professor at Università di Palermo, Italy
Dr. Daniel Sadoc Menasche	Associate Professor at DCC/UFRJ, Brazil

Supervisors

Dr. Giovanni Neglia	Researcher at Inria, France
Dr. Petros Elia	Full Professor at EURECOM, France
Dr. Thrasyvoulos Spyropoulos	Associate Professor at EURECOM, France

M.Sc. in Systems Engineering and Computer Science 09/2016 – 03/2018
Universidade Federal do Rio de Janeiro (UFRJ) Rio de Janeiro, Brazil

Thesis Title: Fractional Edge-Coloring for Link Scheduling in the Physical Interference Model
Host Institution : COPPE/UFRJ, LAND Laboratory
Supervision: Dr. José Ferreira de Rezende (UFRJ, Brazil)
Dr. Valmir Carneiro Barbosa (UFRJ, Brazil)

Defended on 29/03/2018 in front of the following jury:

Reviewers
Dr. Diego Gimenez Passos — Assistant Professor at UFF, Brazil
Dr. Abílio Pereira de Lucena Filho — Full Professor at UFRJ, Brazil

Supervisors
Dr. José Ferreira de Rezende (President) — Associate Professor at UFRJ, Brazil
Dr. Valmir Carneiro Barbosa — Full Professor at UFRJ, Brazil

B.Eng. in Computer and Information Engineering 04/2010 – 09/2016
Universidade Federal do Rio de Janeiro (UFRJ) Rio de Janeiro, Brazil

Thesis Title: Efficient Algorithm for Enumerating Feasible Sets of Links in Wireless Networks Under the Physical Interference Model
Supervision: Dr. José Ferreira de Rezende (UFRJ, Brazil)
Dr. Valmir Carneiro Barbosa (UFRJ, Brazil)

Defended on 28/09/2016 in front of the following jury:

Reviewers
Dr. Daniel Ratton Figueiredo — Full Professor at COPPE/UFRJ, Brazil
Fabio David — Research Engineer at RNP, Brazil

Supervisors
Dr. José Ferreira de Rezende (President) — Associate Professor at COPPE/UFRJ, Brazil
Dr. Valmir Carneiro Barbosa — Full Professor at COPPE/UFRJ, Brazil

Professional Experience

Substitute Lecturer 10/2022 – Present
Université Paris Dauphine – PSL Paris, France

Type of Contract: Temporary (*Vacataire*)
Supervision: Prof. Gabriella Pigozzi
Description: I am in charge of the Junior-Year Computer Networks course for the Computer Science MIAGE Program. In this class, the syllabus includes the types of networks, the OSI model, and layers 1 to 4.

Postdoctoral Researcher 01/2022 – Present
MORE Department – Orange Labs Châtillon, France

Type of Contract: Temporary (*Contrat à durée determiné* – CDD)
Supervision: Dr. Amal Benhamiche and Dr. Nancy Perrot
Description: I am in charge of researching placement and routing of network services for 5G+/6G networks using optimization and MDP.

Ph.D. Student 09/2018 – 08/2021
Université Côte d'Azur (Co-hosted by EURECOM and Inria) Sophia Antipolis, France

Type of Contract: Permanent (*Contrat à durée indeterminé* – CDI)
Supervision: Dr. Giovanni Neglia, Dr. Petros Elia, and Dr. Thrasyvoulos Spyropoulos
Description: I was responsible for performing research on Caching problems using optimization and stochastic processes. I was also responsible for assisting in teaching a master-level course on Network Modeling.

M.Sc. Student 09/2016 – 03/2018
Universidade Federal do Rio de Janeiro (Hosted by LAND/COPPE) Rio de Janeiro, Brazil

Type of Contract: Temporary (Scholarship)
Supervision: Dr. José F. de Rezende and Dr. Valmir C. Barbosa
Description: I was responsible for researching the Fractional Coloring problem for wireless networks using optimization.

Research Engineer 07/2016 – 05/2018
National Education and Research Network (RNP) Rio de Janeiro, Brazil

Type of Contract: Temporary (Part-time researcher)
Supervision: Dr. José F. de Rezende
Description: I was responsible for prospecting state-of-the-art SDN (e.g. Open vSwitch) and virtualization (e.g. OpenStack and Docker) technologies.

Research Activities

Journal Publications

[3] G. Neglia, E. Leonardi, G. I. Ricardo, T. Spyropoulos, "*A Swiss Army Knife for Dynamic Caching in Small Cell Networks*," in **IEEE Transactions on Networking**, 2021. DOI: 10.1109/TNET.2021.3100757

[2] G. I. Ricardo, A. Tuholukova, G. Neglia and T. Spyropoulos, *"Caching policies for delay minimization in small cell networks with coordinated multi-point joint transmissions,"* in **IEEE Transactions on Networking**, 2021. DOI: 10.1109/TNET.2021.3062269

[1] G. I. Ricardo, J. F. de Rezende and V. C. Barbosa, *"Scheduling Wireless Links in the Physical Interference Model by Fractional Edge Coloring,"* in ***IEEE Wireless Communications Letters***, 2020. DOI: 10.1109/LWC.2019.2961361

International Conferences

[4] G. I. Ricardo, A. Benhamiche, N. Perrot, and Y. Carlinet, "Heuristic Distribution of Latency-Sensitive Tasks in Multi-Access Edge Computing Systems," in **IEEE Global Communications Conference (GLOBECOM)** NetMan6G Workshop, 2022, to appear.

[3] G. I. Ricardo, A. Benhamiche, N. Perrot, and Y. Carlinet, "Latency-Constrained Task Distribution in Multi-Access Edge Computing Systems," in **IEEE International Conference on Cloud Networking (CLOUDNET)**, 2022, to appear.

[2] G. I. Ricardo, G. Neglia and T. Spyropoulos, "Caching Heterogeneous Size Content in Small Cell Networks with CoMP Joint Transmissions," in **IEEE Global Communications Conference (GLOBECOM)**, 2021. DOI: 10.1109/GLOBECOM46510.2021.9686003

[1] G. I. Ricardo, G. Neglia and T. Spyropoulos, "Caching Policies for Delay Minimization in Small Cell Networks with Joint Transmissions," in **IEEE International Conference on Communications (ICC)**, 2020. DOI: 10.1109/ICC40277.2020.9149237

Participation in Research Projects

2022 – Present	EUR H2020 Project DEDICAT 6G 101016499
2018 – 2021	EUR DSH4H Investments in the Future Project ANR-17-EURE-0004
2018 – 2021	5C-for-5G JCJCJ ANR-17-CE25-0001

Peer Reviews

2022	Elsevier Computer Communications	2 papers
2021	IEEE Transactions on Aerospace and Electronic Systems	1 paper

Scientific Presentations

Conference and Workshop Talks

[2] Caching Heterogeneous Size Content in Small Cell Networks with CoMP-JT. IEEE GLOBECOM 2021, Madrid, Spain. December, 2021.

[1] Caching Policies for Delay Minimization in Small Cell Networks with CoMP-JT. IEEE ICC 2020, Virtual (Dublin, Ireland). June, 2020.

Technical Seminars

[4] The Dynamic Bipartite Caching Problem. MOMA Seminar, Orange Labs. Châtillon, France. May, 2022.

[3] Caching Policies for Delay Minimization in Small Cell Networks with CoMP-JT. NEO Internal Meeting, Inria. Sophia Antipolis, France. June, 2020.

[2] Caching Strategies for Small Cell Networks. NEO Internal Meeting Retreat, Inria. Avignon, France. June, 2019.

[1] Caching Strategies for Small Cell Networks. NEO Internal Meeting, Inria. Sophia Antipolis, France. December, 2018.

Invited Talks

[4] The Dynamic Bipartite Caching Problem. SNRC Department, IMT. Online (Rennes, France). September, 2022.

[3] Design and Optimization of Edge-Caching Systems. Max Planck Institute. Online (Saarbrücken, Germany). September, 2021

[2] Design and Optimization of Edge-Caching Systems. LAAS CNRS. Online (Toulouse, France). September, 2021

[1] Caching Policies for Delay Minimization in Small Cell Networks with CoMP-JT. Rio de Janeiro, Brazil. December, 2020.

Languages

Portuguese :	Native speaker
English :	Level C2 - Fluent
French :	Level B2 - Intermediate
Spanish :	Level B2 - Intermediate

References (Alphabetical Order)

Dr. Amal BENHAMICHE
Researcher at Orange Labs. Postdoc Supervisor
Contact: amal.benhamiche@orange.com

Dr. Giovanni NEGLIA
Researcher at Inria, Sophia Antipolis – Méditérranée. PhD Supervisor
Contact: giovanni.neglia@inria.fr

Dr. José FERREIRA DE REZENDE
Associate Professor at Universidade Federal do Rio de Janeiro. B.Eng. and M.Sc. Supervisor
Contact: rezende@land.ufrj.br

Dr. Nancy PERROT
Researcher at Orange Labs. Postdoc Supervisor
Contact: nancy.perrot@orange.com

Dr. Valmir CARNEIRO BARBOSA
Full Professor at Universidade Federal do Rio de Janeiro. B.Eng. and M.Sc. Supervisor
Contact: valmir@cos.ufrj.br