

FRANCISCO GERMANO VOGT

Rua Doutor Shigeo Mori, 1517 - Cidade Universitaria, Campinas - SP, Brazil, 13083765

(+55)55996698899 ◊ franciscogermanovogt@gmail.com ◊ intrig.dca.fee.unicamp.br/francisco-vogt

SUMMARY

Francisco Germano Vogt is a Brazilian PhD student (Second year) at the University of Campinas (UNICAMP), Brazil, and works with Information & Networking Technologies Research & Innovation Group (INTRIG). He holds the Bachelor of Computer Science degree from the Federal University of Pampa (UNIPAMPA), Brazil, in 2021, and the Master's degree from the University of Campinas, in 2023. During his undergraduate project at UNIPAMPA, he worked with In-band Network Telemetry (INT) and the positioning of artificial neural networks on the data plane. During his master's project at UNICAMP, he worked using the Inter-Packet Gap (IPG) metric for network monitoring and management in programmable networks. He is involved as a researcher with Ericsson on the project "SMARTNESS 2030: SMART NETWORKS and ServiceS for 2030". His ongoing research works revolve around the optimization of in-network applications using SmartNICs.

RESEARCH INTERESTS

Software Defined Networks (SDN), Network Monitoring and Management, Programmable Data planes, P4, In-band Network Telemetry (INT), 5G/6G Networks.

EDUCATION

University of Campinas (UNICAMP), Brazil

Mar 2023 - Present

Doctor of Philosophy

Department of Computer Engineering and Industrial Automation (DCA)

Advisor: Dr. Christian Rodolfo Esteve Rothenberg

University of Campinas (UNICAMP), Brazil

Mar 2021 - Jun 2023

Master of Science

Department of Computer Engineering and Industrial Automation (DCA)

Thesis Topic: In-band Telemetry of Inter-Packet Gap for Network Monitoring and Management

Advisor: Dr. Christian Rodolfo Esteve Rothenberg

Federal University of Pampa (UNIPAMPA), Brazil

Mar 2017 - May 2021

Bachelor of Science

Department of Computer Science

Undergrad Topic: Towards In-Network Neural Networks

Advisor: Dr. Marcelo Caggiani Luizelli

EXPERIENCE

Graduate Research Assistant

Mar 2021 - Present

Information & Networking Technologies Research & Innovation Group (INTRIG)

Research group at University of Campinas, Brazil

Undergraduate Student Research Assistant

Mar 2018 - May 2021

Optimizations Systems Lab (LOSPAMPA)

Research group at Federal University of Pampa, Brazil

RESEARCH PROJECTS

SMARTNESS 2030: SMART Networks and Services for 2030

Jan 2023 - Present

Research Lab: INTRIG, External Collaborators: FAPESP and Ericsson

Focused on Network monitoring and management

Intent-based Packet-Optical Autonomous Networks

Nov 2022 - Present

Research Lab: INTRIG, External Collaborators: Padtec

Working on P4-TNA code for Disaggregated Cell Site Gateways (DCSG)

5G Services With Machine Learning in Programmable Networks

Dec 2021 - Dec 2022

Research Lab: INTRIG, External Collaborators: Ericsson

Investigated IPG use cases and the Quality of Experience (QoE) Estimation Entirely in the Data plane

In-network Edge Control Applications using Programmable Switches

Mar 2021 - Jul 2021

Research Lab: INTRIG, External Collaborators: Ericsson

Developed a Inter-packet gap monitor using the In-band Network Telemetry monitoring primitives

Towards Self-Driving In-Band Network Telemetry Orchestration in Programmable Data Planes

Mar 2020 - Jul 2021

Research Lab: LOSPAMPA, External Collaborators: FAPESP

Working in the use of Neural Networks on Programmable Data Planes

Telemetry Orchestration in Programmable Data Planes

Jan 2019 - Dez 2019

Research Lab: LOSPAMPA, External Collaborators: FAPERGS

Working in the In-band Network Telemetry (INT) orchestration

TECHNICAL STRENGTHS

Languages	C/C++, P4 (v1model and TNA), Python, Bash, Java, SQL
Tools	Latex, Mininet, Wireshark, Docker
Operating System	Linux, Windows

PUBLICATIONS

References

- [1] Ariel G Castro, **Vogt, Francisco G**, Victor HS Lopes, Fabio D Rossi, Arthur F Lorenzon, and Marcelo C Luizelli. "Patcher: Towards Fault-Tolerant Probing Planning for In-band Network Telemetry". In: *2020 IEEE Latin-American Conference on Communications (LATINCOM)*. IEEE. 2020, pp. 1–6.
- [2] Filipo G Costa, **Francisco G Vogt**, Fabricio Rodríguez Cesen, Ariel Góes de Castro, Suneet Sing, Marcelo Caggiani Luizelli, and Christian Esteve Rothenberg. "PIPO-TG: parameterizable high performance traffic generation". In: *NOMS 2024-2024 IEEE/IFIP Network Operations and Management Symposium*. 2024.
- [3] **Francisco Germano Vogt**, Fabricio Rodriguez, Christian Rothenberg, and Gergely Pongrácz. "In-band Inter Paket Gap Telemetry (IPGNET): Unlocking Novel Network Monitoring Methods". In: *2022 IEEE Global Communications Conference (GLOBECOM) Industry Demo Sessions*. IEEE. 2022.
- [4] **Francisco Germano Vogt**, Fabricio Rodriguez, Christian Rothenberg, and Gergely Pongrácz. "Innovative network monitoring techniques through in-band inter packet gap telemetry (IPGNET)". In: *Proceedings of the 5th International Workshop on P4 in Europe*. 2022, pp. 53–56.
- [5] Rumenigüe Hohemberger, Ariel G Castro, **Francisco G Vogt**, Rodrigo B Mansilha, Arthur F Lorenzon, Fabio D Rossi, and Marcelo C Luizelli. "Orchestrating in-band data plane telemetry with machine learning". In: *IEEE Communications Letters* 23.12 (2019), pp. 2247–2251.

- [6] Fabricio Rodriguez, **Francisco G Vogt**, Ariel Góes De Castro, and Christian Rothenberg. “Towards Multiple Pipelines Network Emulation with P7”. In: *Demo Accepted in IEEE International Conference on Network Softwarization*. 2023.
- [7] Fabricio Rodriguez, **Francisco G Vogt**, Ariel Góes De Castro, Marcos Felipe Schwarz, and Christian Rothenberg. “P4 Programmable Patch Panel (P7): An Instant 100G Emulated Network on Your Tofino-based Pizza Box”. In: *ACM SIGCOMM 2022 Conference (SIGCOMM '22 Demos and Posters)* (2022).
- [8] **Vogt, Francisco**, Fabricio Rodríguez Cesen, Ariel Góes De Castro, Marcelo Caggiani Luizelli, Christian Esteve Rothenberg, and Gergely Pongrácz. “Demo of QoEyes: Towards Virtual Reality Streaming QoE Estimation Entirely in the Data Plane”. In: *2023 IEEE 9th International Conference on Network Softwarization (NetSoft)*. 2023, pp. 311–313. DOI: 10.1109/NetSoft57336.2023.10175493.
- [9] **Vogt, Francisco**, Fabricio Rodríguez Cesen, Ariel Góes deCastro, Marcelo Caggiani Luizelli, Christian Esteve Rothenberg, and Gergely Pongrácz. “QoEyes: Towards Virtual Reality Streaming QoE Estimation Entirely in the Data Plane”. In: *2023 IEEE 9th International Conference on Network Softwarization (NetSoft)*. 2023, pp. 267–271. DOI: 10.1109/NetSoft57336.2023.10175463.

EXTRACURRICULAR ACTIVITIES AND ACCOMPLISHMENTS

Participated in ACM International Conference on emerging Networking EXperiments and Technologies, Paris, France, 2023
Travel grant award for participation in ACM International Conference on emerging Networking EXperiments and Technologies, Paris France, 2023
Participated in ACM Special Interest Group on Data Communication (SIGCOMM), New York, USA, 2023
Travel grant award for participation in ACM Special Interest Group on Data Communication (SIGCOMM), New York, USA, 2023
Invited visitor in Ericsson research traffic lab, Budapest, 2023
Invited visitor in ANT lab, Politécnico Di Milano, Milan, 2023
Participated in The 9th International Conference on Network Softwarization (NetSoft), Madrid, 2023
Participated in The 5th European P4 Workshop (EuroP4), Rome, Italy, 2022
Participated in ACM International Conference on emerging Networking EXperiments and Technologies, Italy, 2022
Travel grant award for participation in ACM International Conference on emerging Networking EXperiments and Technologies, Rome, Italy, 2022
Participated in IEEE Global Communications Conference, Brazil, 2022
Participated in The Brazilian Symposium on Computer Networks and Distributed Systems, Brazil, 2019
Participated in The Brazilian Regional School of Computer Networks, Brazil, 2019
2nd best paper in The Brazilian Regional School of Computer Networks, Brazil, 2019
Participated in The Brazilian Regional Workshop on Information and Computer Systems Security (WRSeg), Brazil, 2019
1st best paper in The Brazilian Regional Workshop on Information and Computer Systems Security (WRSeg), Brazil, 2019

LANGUAGES

Portuguese: Native, English: Intermediate

PERSONAL TRAITS

Highly Motivated and Eager to Learn New Things
Proficient in Working Both Independently and as Valuable Team Member

Communicative
Self-taught