DR. TIAGO RODRIGO KEPE

Software Engineer with 13+ years of experience in backend/frontend development. I have worked on large projects for the Brazilian government and the software industry, designing and implementing high-traffic, distributed, scalable, and reliable systems. I am still eager to learn new technologies and work on cutting-edge data engineering and systems development.



CONTACT

▼ tiagokepe@gmail.com

@tiagokepe

in Tiago R. Kepe

SKILLS

Programming

Bash
Java
C++/C
SQL
Python
Assembly (SIMD)
HTML/CSS

HTML/CSS
Java Script
Grovy Script
React

Golang

Operating Systems

Linux Windows



Software & Tools

Version Control (e.g. git, svn)

Pipelines CI/CD
Github Actions

Database Systems

PostgreSQL, MySQL

SQLite, DuckDB, MonetDB

NoSQL: Hadoop, Hive, Spark **Cloud**

AWS RDS, AWS EC2

AWS ECR, AWS ECS Docker

Languages

Portuguese English

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CERTIFICATES

RNP (Brazil) - Linux System Administra-

tion: Network and Security

RNP (Brazil) - Linux System Administra-

tion: Services to Internet (ADS4)

AWARDS AND HONOURS

JMC Best Paper Award, SBC - SBBD2015

C EXPERIENCE

2015 - current

♀ Federal Institute of Education Paraná

Senior Software Engineer

- Full-stack software engineer of all code-cycle since analysis, design, coding, testing, and sustaining. Having a deep understanding of CS fundamentals (algorithms and data structures), experienced with design patterns, MVC architectural design, TDD, and coding best practices;
- Responsible for designing and implementing scalable and reliable academic and administrative systems to support 3.000+ on-line users with high traffic and data ingestion requirements;
- Database administrator (DBA): maintaining data for systems with 3.000+ online users, including database architecture, data modeling, replication, ingestion, synchronization, and ETL;
- Migrating PostgreSQL and MySQL instances from on-premise to the cloud (AWS RDS and EC2);
- Linux server administrator using Python and Shell script for tasks automation;
- Tech stack includes (but not limited): Java Web with JSF/JSP, CSS, HTML, JavaScript, React, Rest API, Hibernate, Python, Shell scripting, C++, Golang, Docker, and so.

2020 - 2022

OuckDB Engineering B.V.

Database System Engineer (Remote)

- Design and implementation of new SQL commands, SQL data types, optimized string functions;
- Data integration APIs: C++ UDF API for vectorized processing and SQLite UDF wrapper;
- Query optimizer: optimization rules for filter pullup, pushdown, and predicate transitivity.
 Query rewrite strategies resulting in faster query execution around 6x of improvements;
- ODBC driver for Windows and Linux with setup scripts, and ODBC scanner extension tool.

2014 - 2015

- National Scientific Computing Laboratory Solutions Architect and Researcher
- Conceiving distributed architectures for a federated computing system for Brazil e-Government;
- Data engineering and designing distributed data processing systems for BigData environment.

2012 - 2014

Siemens Enterprise Communications

Software Engineer

- Designing and development of testing frameworks (Java, C++, C#) for Siemens' VoIP systems;
- Troubleshooting of soft phone environments based on SIP, TCP/IP, UDP protocols, and SOAP;
- Development of dashboards (Java) to monitor the health status of Siemens' software solutions;
- Reverse engineering of legacy systems through network traffic analyzer (wireshark, debuggers).

1 07/2011 - 12/2011

9 HSBC Bank

Data Analyst (Intern)

• Data engineering, data modeling, and data governance on several and large datasets.

2009 - 06/2011

- Center for Scientific Computing (C3SL) Software Engineer (Intern)
- Design/Implement database schemas and Data Warehouse on PostgreSQL;
- Administer a Data Warehouse to ingest the daily inventory of 500.000+ devices;
- Development of systems in C and C++ (using QT framework), and Bash/Shell script.

EDUCATION

2021 - 2022

♀ Federal University of Paraná - Brazil

2015 - 2019

♥ Federal University of Paraná - Brazil

2012 - 2014

♀ Federal University of Paraná - Brazil

2008 - 2011

Federal University of Paraná - Brazil

Postdoc, Computer Science

Ph.D., Computer Science

M.Sc., Computer Science

B.Sc., Computer Science

GENERAL SKILLS

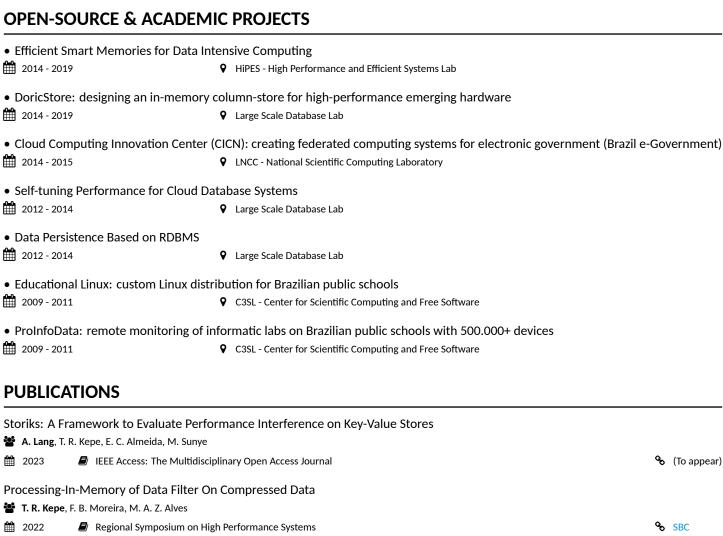
Resilient

Goal-oriented

Problem-solving

Empathetic

OPEN-SOURCE & ACADEMIC PROJECTS Efficient Smart Memories for Data Intensive Computing 2014 - 2019



Evaluation of Hash Join Operations Performance Executing on SDN Switches: A Cost Model Approach M. S. Franco, S. Dominico, T. R. Kepe, L. C. P. Albini, E. C. de Almeida, M. A. Z. Alves: ₩ 2022 Journal of Information and Data Management (JIDM) % SBC

Advancing Near-Data Processing with Precise Exceptions and Efficient Data Fetching S. R. Santos, T. R. Kepe, F. B. Moreira, P. C. Santos, M. A. Z. Alves % IEEE **2022** International IEEE Symposium on Performance Analysis of Systems and Software (ISPASS) Advancing Database System Operators with Near-Data Processing

📽 S. R. Santos, T. R. Kepe, F. B. Moreira, M. A. Z. Alves **#** 2022 Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP) % IEEE

Survey on near-data processing: Applications and architectures P. C. Santos, F. B. Moreira, A. S. Cordeiro, S. R. Santos, T. R. Kepe, L. Carro, M. A. Z. Alves ₩ 2021 % JICS Journal of Integrated Circuits and Systems

Performance Interference on Key-Value Stores in Multi-tenant Environments: When Block Size and Write Requests Matter A. Lang, T. R. Kepe, M. Sunye

■ ACM/SPEC International Conference on Performance Engineering (LTB@ICPE)

Uncovering Performance Interference of Multi-Tenants in Big Data Environments A. Lang, T. R. Kepe, E. C. Almeida, M. Sunye

% ACM

2020 ■ IEEE International Conference on Big Data (IEEE BigData) % IEEE

Database Processing-in-Memory: An Experimental Study T. R. Kepe, E. C. Almeida, M. A. Z. Alves

2019 Proceedings of Very Large Data Bases (VLDB Endowment) % ACM

T. R. Kepe, E. C. Almeida, M. A. Z. Alves, J. A. Meira

Database Processing-in-Memory: A Vision

2019 Database and Expert Systems Applications (DEXA) % ACM

T. R. Kepe		
	⊗	DINF
Near-Data Filters: Taking Another Brick from the Memory Wall		
D. G. Tome, T. R. Kepe, M. A. Z. Alves, E. C. Almeida		
	œ	DINF
Intrinsics-HMC: An Automatic Trace Generator for Simulations of Processing-In-Memory Instructions		
A. S. Cordeiro, D. G. Tome, T. R. Kepe, M. A. Z. Alves, E. C. Almeida		
	P	DINF
KSample: Dynamic Sampling Over Unbounded Data Streams		
T. R. Kepe, E. C. Almeida, T. Cerqueus		
2015 Sational Symposium of Database (SBC - SBBD2015)	⊗	SBC

Dynamic Database Operator Scheduling for Processing-in-Memory