Bruno Henrique Meyer

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EXPERIENCE

DevOps / Developer - Brick Abode (Contractor) (Jul/2023 - Current)
Assignments: Development of web systems (backend and frontend); Devops and Cloud management (AWS and GCP); Blockchain development; Development of a new PL for PostgreSQL; Maintenance of legacy systems for videos and caption processing; E2E tests using Cypress; Design of pitch for business proposal; Automation of internal processes for improving business efficiency, including applications of AI and LLM;

CNPq Scholarship (Doctorate) - Federal University of Paraná (Sep/2021 - Current)
Assignments: Research and production of scientific articles in the areas of **Artificial Intelligence** to apply **Federated Learning** methods in **Cybersecurity**.

Scholarship in Technical Training Program (FAPESP) - Federal University of Minas Gerais (May/2021 - Sep/2021) * *Currently participating as a volunteer.* **Assignments: DevOps**, REST API and **fullstack development using Django and React**. **Cybersecurity** Testbed Cluster management using **Kubernetes** through automation with Python and Kubernetes plugins. Academic research for cybersecurity experiments reproducibility.

CNPq scholarship (Master's) - Federal University of Paraná (Feb/2018 - May/2021). **Assignments:** Production of scientific articles in **Artificial Intelligence** and **High Performance Computing**.

Center for Scientific Computing and Free Software (C3SL) - Center for Scientific Computing and Free Software - Federal University of Paraná (Feb/2018 - Jan/2019). **Assignments**: Development and maintenance of Open-Source softwares; Systems development. Linux server administration.

Fellow in the PET Computing group UFPR - Tutorial Education Program (Former Special Training Program) (Apr/2015 - Jan/2018). **Assignments**: Development of web systems. Development of **2D/3D games**. Offers **lectures and workshops** in programming languages and other computer technologies. Administration of GNU/Linux systems and applications. Mobile development.

KNOWLEDGE

- **Web**: Pure html/css/js; **NodeJS**; **Rails**; **Django**; **Flask**/**FastAPI**; **Angular**; **React**/**NextJS**; **Loopback**; **Nginx; Apache; E2E test frameworks like Cypress**
    - 13 years of experience in web development
- **DevOps** experience with **AWS** and **GCP** cloud/cluster resources using **Kubernetes** and **Terraform**;
- Databases: PostgreSQL; Mysql; MongoDB; Development of procedural languages;
- Experience maintaining a blockchain project (Rust development);
- +10 years experience with Linux systems and tools for server maintenance and deployments;
- Deep knowledge and experience in data analysis for creating meaningful metrics, graphs and **data visualization** applications that allow you to gain insight into problems (example in [1], [2] and [3]);
- Experience with parallel computing (**CPU/GPU**) and High Performance Computing;
- 3 years of experience developing and maintaining systems with **SSO** and authentication technologies for **social and federated authentication** like SAML, OAuth; SATOSA.
- Experience with multidisciplinary projects (computer science, biology and geoscience);
- Experience in implementing and adapting solutions from scientific articles to solve real problems;
- **Github**, **Git** and **Docker** versioning tool for *deployment* of applications using CI-CD;
- **Pytorch**/**Tensorflow**: Development of Artificial Neural Networks to solve real-world problems;

- Experience with languages: **Expert**: Python; **Advanced**: Javascript/Typescript; C/C++/CUDA; Shellscript; **Intermediate**: Go; Rust; Ruby; PHP; Java;
- **LLM / AI** for custom applications like AI agent for automation and report generation;

EDUCATION

PhD in progress in Computer Science at the Federal University of Paraná (2021 - 2025):

- Application of Artificial Intelligence (Federated Learning) in cybersecurity problems. (Fully completed doctoral credits)

Master in Computer Science at the Federal University of Paraná (2019-2021):

- Study of techniques to increase the scalability of machine learning algorithms for dimensionality reduction and data visualization. The study focused on using GPU to accelerate algorithms.

Bachelor in Biomedical Informatics at the Federal University of Paraná (2015-2018).

- **Areas of interest**: Bioinformatics; *Data Science*; Artificial intelligence; Cybersecurity; Testbeds;
- **Voluntary Scientific Initiation -** PIBIC (Feb/2017 to Dec/2018): Java developer, creating softwares for biology diversity analysis, phylogenetic analysis applying alignment algorithms and machine learning.

Languages: Fluent in **English** and **Portuguese**

Self-Education (Basic)**: Marketing/Design** theory, applications and tools; **Science Communication**

SCIENTIFIC PRODUCTION

More than **25 published articles** including journals and conferences with high impact factor. **H-Index: 7**

5 Selected Publications (Complete list on my Google Scholar)

- **A Scalable Cyber Security Framework for the Experimentation of DDoS Attacks of Things.** NOMS 2023-2023 IEEE/IFIP Network Operations and Management Symposium. (9 citations)
- **Microbial communities network analysis of anaerobic reactors fed with bovine and swine slurry.** Science of the Total Environment. (55 citations)
- **Global and local structure preserving GPU t-SNE methods for large-scale applications.** Expert Systems with Applications, 201. (31 citations)
- **Improving barnes-hut t-sne algorithm in modern gpu architectures with random forest KNN and simulated wide-warp.** ACM Journal on Emerging Technologies in Computing Systems (JETC). (11 citations)
- **Federated Self-Supervised Learning for Intrusion Detection.** In 2023 IEEE Symposium Series on Computational Intelligence (SSCI). (8 citations)

PERSONAL PROJECTS and ACHIEVEMENTS

- I led a development team to implement a cybersecurity testbed and web system (MENTORED) with a cloud provider-like system integrated with provisioning, access, and monitoring systems for multi-cluster Kubernetes environments. I intend to continue the project as a self-hosted software alternative for cloud providers.
- Obtaining research funding to present my articles at relevant international conferences.
- Several invitations to serve master's thesis committee, present courses at academic/technical events, and give academic lectures.
- Ongoing personal project to create new technology that enables Docker and Kubernetes on Android. Development of a new Container Runtime (CRI), and forking the official Minikube and Kubernetes project to change the Kubelet module.