

<mailto:bbgstb@gmail.com>

<https://bbguimaraes.com>

tel:+420722289709

BRUNO BARCAROL GUIMARÃES

EDUCATION **Centro Superior de Tecnologia TECBrasil**
2005-2007: Computer Technician Technical Course
Universidade de Caxias do Sul
2011: Linux Administration Short Course
2008-2013: Bachelor's Degree in Computer Science

RESEARCH PROJECTS **Universidade de Caxias do Sul**
2010: Efficient liver surgery planning in 3D based on functional segment classification and volumetric information
2011: Development of an anti-phishing filter

PROFESSIONAL EXPERIENCE **Universidade de Caxias do Sul**
2012-2014: Trainee Programmer
2014-2015: Programmer
2015: Senior Programmer
Red Hat
2016-2017: Associate Software Engineer
2017-: Software Engineer

LANGUAGES **Portuguese, English**
fluent
Latin, Czech
studying

EVENTS (TALKS) **bash and gnu/linux**
2013: TchêLinux Caxias
Free cloud with owncloud
2014: TchêLinux Caxias
Linux containers
2014: pycaxias, TcheLinux Porto Alegre
2015: FISL
2016: ContainerCon Europe

HOBBIES Music
Languages
Math/physics
Exercising, strength training, biking
Cooking, gardening

EDUCATION

COMPUTER TECHNICIAN

Technical course

Institution: Centro Superior de Tecnologia TECBrasil

Duration: 1.5 years

LINUX ADMINISTRATION

Short course

Original title: Curso Administração de SO Linux

Institution: Universidade de Caxias do Sul

Instructor: Amador Pahim

Duration: 32h

Website: <https://github.com/jpteixeira/AdmLinuxEd02>

Topics:

- introduction: unix/linux history, free software, linux distributions
- basic commands: shell commands, file/directory manipulation
- vi: text editing
- shell script: if/for/case/while, variables, input/output
- software installation: rpm/yum, deb/apt, source
- system initialization: boot sequence, grub, runlevels, init, sysv/upstart

IMMUNE SYSTEM BASED DATA MINING: A CASE STUDY ON FRAUD DETECTION

Bachelor's degree thesis

Original title: Mineração de Dados baseada nos Sistemas Imunológicos: um estudo de caso na Detecção de Fraude

Institution: Universidade de Caxias do Sul

Advisor: Carine Geltrudes Webber

Website: <https://github.com/bbguimaraes/tcc>

Abstract: Artificial Immune Systems are a field of Artificial Intelligence that developed on the early 90's, and remains subject to researches event today. Beginning on computer security systems, algorithms based on the immune system have been used on many areas of computing. The power of abstraction the design of these systems as components of the natural immune system helped their development. Using a package of immune algorithms and the WEKA environment, this study will verify how the application of Artificial Immune Systems influences a computational system, comparing them with more traditional techniques from Data Mining and Artificial Intelligence.

RESEARCH PROJECTS

EFFICIENT LIVER SURGERY PLANNING IN 3D BASED ON FUNCTIONAL SEGMENT CLASSIFICATION AND VOLUMETRIC INFORMATION

Original title: Hepatectomia 3-D: Visualização e interação 3D aplicados à simulação de cirurgia hepática

Institution: Universidade de Caxias do Sul / FAPERGS

Advisor: Anderson Maciel

Duration: 6 months

Attributions: development of a mass-spring system to simulate the thread of a surgical suture on a computer model of a human liver.

Technologies:

- **Operating systems:** linux, windows
- **Languages/libraries:** c/c++, opengl
- **Area:** graphics programming, physics

Abstract: Anatomic hepatectomies are resections in which compromised segments or sectors of the liver are extracted according to the topological structure of its vascular elements. Such structure varies considerably among patients, which makes the current anatomy-based planning methods often inaccurate. In this work we propose a strategy to efficiently and semi-automatically segment and classify patient-specific liver models in 3D. The method is based on standard CT datasets and allows accurate estimation of functional remaining liver volume. Experiments showing effectiveness of the method are presented, and quantitative and qualitative results are discussed.

DEVELOPMENT OF AN ANTI-PHISHING FILTER

Institution: Universidade de Caxias do Sul / CNPq

Advisor: Carine Geltrudes Webber

Duration: 9 months

Attributions: integration of an anti-phishing filter based on artificial immune systems with the postfix mail server.

Technologies:

- **Operating system:** linux
- **Languages:** shell, c#
- **Programs:** postfix
- **Areas:** systems programming, artificial intelligence

PROFESSIONAL EXPERIENCE

UNIVERSIDADE DE CAXIAS DO SUL

Titles: Trainee programmer (2012-2014), Programmer (2014-2015), Senior programmer (2015)

Location: Caxias do Sul, Brazil

Attributions:

- Development of computer systems used by the university's teachers, students, and employees (~30k users).
- Web development with a traditional linux stack, web server configuration and maintenance.
- Configuration and maintenance of auxiliary web application infrastructure, e.g.: memcache (memory caching service), celery (python work queue manager), and buildbot (continuous integration service).
- Configuration of a redmine instance for internal issue tracking.
- Integrated authentication (single sign on) of multiple services (internal python/django applications, redmine, wordpress).
- Utilization of linux containers for the development and deployment of web applications.

Technologies:

- **Operating systems:** linux (CentOS, RHEL, docker)
- **Languages:** python, html, css, js, c, ruby, php
- **Web frameworks:** django, rails, wordpress
- **Databases:** sqlite, postgresql, oracle
- **Web servers:** apache, nginx, mod_wsgi, uwsgi, passenger
- **Services:** memcache, sentry, celery, buildbot, mongodb, ldap, active directory, SAML

RED HAT - OPENSIFT - INTEGRATION SERVICES

Title: Associate software engineer (2016)

Location: Brno, Czech Republic (remote team in the USA)

Attributions:

- Integration of external applications that provide additional services to the cluster into the core distribution.
- Development and maintenance of deployment configuration and scripts, automated tests.
- Transition the deployment of the components from shell scripts to ansible playbooks.

Platform: kubernetes, openshift, shell, go, java.

Services: logging (fluentd, elasticsearch, kibana), metrics (heapster, hawkular, cassandra), API (apiman).

Public repositories:

- <https://github.com/openshift/origin-metrics.git>
- <https://github.com/openshift/origin-aggregated-logging.git>
- <https://github.com/openshift/openshift-ansible.git>

RED HAT - OPENSIFT - CONTINUOUS INTEGRATION/DELIVERY

Titles: Associate software engineer (2017), Software engineer (2017-)

Location: Brno, Czech Republic (team local and remote in the USA)

Attributions:

- Maintenance of the processes for building, verifying and publishing official releases and container images.
- Development of the tools used in continuous integration for pull request validation, unit and integration tests, and internal tools used by the team.
- Deployment automation, maintenance, and testing of the Openshift Online and Dedicated clusters.
- Development and deployment of upstream kubernetes CI infrastructure.

Platform: kubernetes, openshift, jenkins, ansible.

Infrastructure: docker, vagrant, bare-metal, Amazon EC2.

CI jobs: python, shell, go, groovy, java.

Public repositories:

- <https://github.com/openshift/aos-cd-jobs.git>
- <https://github.com/openshift/release.git>
- <https://github.com/kubernetes/test-infra.git>
- <https://github.com/openshift/origin-ci-tool.git>
- <https://github.com/openshift/openshift-ansible.git>

EVENTS (TALKS)

Presentations and source files at <https://bbguimaraes.com/talks>.

BASH AND GNU/LINUX

Event: TchêLinux Caxias (2013)

Summary: A practical demonstration of how the gnu tools in a linux operating system can be used in common day-to-day tasks of programmers/system administrators.

Website: http://tchelinix.org/wiki/evento_2013_08_cxs#bash_e_gnulinix

FREE CLOUD WITH OWNCLOUD

Event: TchêLinux Caxias (2014)

Summary: A presentation of the project and a practical guide to enable people with little or no experience with servers and/or owncloud to install and configure this personal cloud service.

Website: <http://caxias.tchelinix.org#speech-4>

LINUX CONTAINERS

Events: pycaxias (2014), TcheLinux Porto Alegre (2014), FISL (2015)

Summary: A presentation of the tools in the kernel and userspace for application isolation. Technologies in constant development will be discussed: systemd, lxd and docker, with practical demonstrations of their use in systems development and discussion of their advantages and disadvantages.

Websites:

- <http://pycaxias.org/2015/index.html#speech-3>
- <http://poa.tchelinix.org/#speech-12>
- <http://schedule.fisl16.softwarelivre.org/#/talk/447>
- <http://sched.co/7oHa>

HOBBIES / SIDE PROJECTS

NNGN

A 2d physics/game engine. Written from scratch using opengl for graphics and lua for scripting. Includes axis-aligned and rotated collision detection, animation and tilesheet support, and scripting. Can also run on a browser using emscripten / web assembly.

- <https://bbguimaraes.com/nngn>

OPENSIFT

Personal openshift cluster on a virtual server (Digital Ocean) serving:

- <https://bbguimaraes.com>: a static website: <https://github.com/bbguimaraes/bbguimaraes.com.git>.
- <https://nextcloud.bbguimaraes.com>: a Nextcloud installation, using postgresql, php-fpm, memcached and nginx: <https://github.com/bbguimaraes/openshift-nextcloud.git>.
- <https://git.bbguimaraes.com>: a personal git server which supports read-only and write access, using nginx, uwsgi, and git-http-backend: <https://github.com/bbguimaraes/openshift-git.git>.
- <https://matrix.bbguimaraes.com:8448>: an installation of the Matrix decentralized communication project for personal use.

TECHNOLOGY

- Installing and running CyanogenMod/LineageOS on cellphones.
- Experiments with a raspberry pi: running services such as ssh, stunnel, apache, nginx, php, owncloud, nagios.
- Other uses of container technologies (systemd-nspawn / docker / openshift): all kinds of games, apache, java, latex, redmine, weechat, ...
- Reading and doing exercises of books from different areas, such as *Structure and Interpretation of Computer Programs*, *The Linux Programming Interface* and *21st Century C*.
 - <https://github.com/bbguimaraes/sicp.git>
 - https://github.com/bbguimaraes/21st_century_c.git
 - <https://github.com/bbguimaraes/open.gl.git>
- Miscellaneous:
 - This curriculum: <https://github.com/bbguimaraes/cv.git>.
 - College assignments: <https://github.com/bbguimaraes/college.git>.
 - Dot files: <https://github.com/bbguimaraes/dotfiles.git>.

MUSIC

- Music studies from the age of fifteen.
- Instruments: bass guitar, piano, guitar, mandolin, harmonica, drums, ...
- Recording performances and publishing videos/scores/sources: <https://bbguimaraes.com/music>.
- Playing in bands, with one CD recorded: <https://www.youtube.com/larajackpot>.

LANGUAGES

- Fluent: Portuguese, English.
- Familiarity: Spanish, Italian.
- Studying: Latin, Czech.