David Bensoussan Software Engineer specialized in devops, embedded and systems

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💼 Stuttgart, Germany

In a few words, I am passionate of new technologies and particularly robotics, automation and all their fields of applications.

Currently at Synapticon in the Stuttgart region, I planned, designed and coded for each software stack of an **autonomous lawnmower robot**: high level robotics with **ROS** (mainly Python), low level embedded on **SOMANET** (XC, close to C), **embedded Linux** with Yocto and the **CI/CD** of those topics.

I spent most of my time working on the lawnmower, but I also acted occasionally as a support for internal and clients projects. My second main project has been to develop a **scalable test infrastructure for embedded** and tests running on them.

I recently started doing **freelancing** on devops and embedded topics to challenge myself and enhance my skills by delivering more applications.

Experiences

🇩🇪 Synapticon

Full stack robotics for an autonomous lawnmower targeting the consumer market
Continuous integration and testing for robot and embedded hardware

March 2015 -> Today - Full time - Stuttgart, Germany

- **(CI/CD)** Architected and managed a fully automated CI/CD pipeline, deployed microservice infrastructure on multiple architectures and providers (AWS for amd64 and Scaleway for arm64), wrote and automated processes and QA for multiple projects. Set and reached goals on our CI/CD pipeline for different topics: build management and continuous integration, environments and deployments, release management and compliance, testing, CI/CD visibility and configuration management. Mentored interns.
  automation, AWS, autoscaling, Bash, Cloud Computing, CI, CD, deployment, Docker, Git, Jenkins, Kubernetes, Packer, Python, Scalability, Terraform
- **(Linux)** Accomplished to have multiple home made embedded Linux with over the air update support, real time capabilities on arm64/amd64 running robotics software stacks. Debugged and optimized software libraries to be able to run on arm64. Optimized one OS to boot and start all applications in under 6 seconds.
  automation, arm, arm64, AWS, Bash, beaglebone, cmake, cross compiling(arm/arm64), Docker, Linux, Linux kernel, make, networking, raspberrypi, real-time, systemd, sysvinit, yocto
- **(Embedded)** Developed 15 low level applications and libraries on XMOS multicore chips: sensor data acquisition (encoder, imu, lidar), motor control, odometry. Refactored common code out of 5 libraries reducing total memory used by 25%.
  C, design patterns, I2C, SPI, tuning, TDD, UART, XC (close to C)
- **(High level)** Developed state machines, behaviours, localization and navigation software. Developed unit testing software for motor control boards. I also worked on tracking requirements to the tests, used to automate acceptance test reports and documentation. For this, I closely worked with the product manager and safety manager.
  cartographer, design patterns, openhtf, Pytest, Python, Redmine, ROS, static analysis, sphinx, tuning, TDD

Took part in different parts of projects following best practices in an agile environment small team.
Contributed back to open source: cartographer, Jenkins, mender, the Linux kernel, ROS (Infrastructure and code), wiringpi, yocto and most tools I used.
Tested robots on fields, indoor and outdoor, familiar planning client demonstrations and fulfilling their requirements until last moments when required.

🌍 Freelancing

Devops Manager / Linux and ROS development

May 2018 -> Today - 15 hours/week
Working for mutliple clients remotely, mostly devops topics, hourly and contract based.

- Planned and developed CI/CD processes, containerized 100-ish applications, providing robust development environments
- Troubleshooted ROS software, packaged ROS applications in containers
  AWS, autoscaling, beaglebone, Docker, hetzner, Jenkins, Networking, remote, ROS, SQL

🇫🇷 Maintool

Heart rate sensor design

April -> July 2014 - Student internship - Paris, France
Designed the electronics and developed software of the main sensor of a connected watch strap, based on LEDs and photodiodes.

Education

ESIEA

2010 - 2015

🎓 **Graduate school of Engineering - Master of Science**

Embedded systems major, 3 years in robotics student organization (including one year of presidency), robotics courses and competition organization.