

Sergey Bashkirov

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Goal

Software Engineer with R&D experience in Atomic Force Microscopy, Raman TERS imaging with a focus on software and firmware development with active opensource community participation is seeking for a full time position in software/firmware development.

Areas of expertise

Crossplatform programming: GUI, hardware communication
Firmware design: Real time firmware, actuators control, physical properties measurement, RTOS and bare metal firmware
Visualization: Widgets design, Spatial, 3D geometry, 3D visualization
RPC design: Remote control over network
Scripting and automation: Scripting languages, embedded scripting, bare metal firmware scripting
Math: Computer vision, Kalman filtering, machine learning, statistics, data, image processing

Technical proficiencies

Platforms: Linux, Windows, ChibiOs, FreeRTOS.
Scripting: Lua, Ruby, Python, SQL, R, Shell scripting.
Programming: C, C++, Java, microcontroller assembler.
Web technologies: Ruby-on-rails4, Javascript, Bootstrap

Work

Aist-NT Inc. **Novato, CA**
Software Engineer

- Created and maintained main software package for microscope control, implemented a few AFM scanning and Raman spectral mapping modes, designed video microscope image mapper.
- Designed scriptable GUI building framework and embedded real time scripting language for scanning modes prototyping and actuators control. User this toolset for creating measurement modes and tip search automation.
- Created firmware for a number of devices for actuators control and physical properties measurement, designed PCB for a few hardware solutions.
- Created WEB based software for warehouse keeping, production control, expenses calculation. Built statistical predictive models for parts consumption, sales forecasting.

Transmag **Santa Rosa, CA**
Contractor
Designed USB communication firmware, cross platform control software for BLDC motor controller. Suggested electrical design rules for communication line design.

Education

Moscow Institute of Physics and Technology **Moscow, Russia**
Master of Science in Applied Mathematics and Physics

- Circuits & Electronics, Machine learning, SAAS, Autonomous navigation, Statistics with R, Node.JS, Angular.JS, Bootstrap, JavaScript.

Open source projects participation

grambo-pi.com: Created expandable stackable PCBs set for RaspberryPi computer for robot prototyping.
xonotic.org: Created Blen2map Blender3D to MAP exporter.
chibios.org: Submitted I2C slave mode driver, IWDG driver.
QtLua: Provided a patch making Object::connect() work in the same way as in Qt.

Gaw: Provided a patch fixing crashes with default configuration file for gaw waveform viewer.