Sergey Bashkirov

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Goal

Application software engineer with R&D experience in software and firmware development related to Atomic Force Microscopy, Raman TERS imaging with active open source community participation is seeking for a full time position in application development.

Areas of expertise

AFM: Contact, semicontact, Kelvin, MFM, PFM

Programming: Crossplatform, embedded programming, realtime algorithms, RTOS

Raman: Confocal Raman, coupled mapping, TERS imaging

Math: 2d/3d geometry, computer vision, machine learning, statistics, image processing

Technical proficiencies

Programming: C, C++, Java, microcontroller assembler

Platforms: Linux, Windows, ChibiOs, FreeRTOS

Frameworks: Qt, Boost, Swing, WxWidgets

Scripting: Lua, Ruby, Python, Maxima, SQL, R, Shell scripting

Web technologies: Ruby-on-rails4, Javascript, Bootstrap

Various: PCB design, Spice simulation, hardware debugging, mature soldering skill

Microcontroller series: ST Cortex-M; Atmel AVR8; Analog Devices Shark DSP, NXP ARM7TDMI

Most recent work experience

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

o Created and maintained main AFM software.
o Designed scriptable GUI building framework and embedded real time scripting language for modes prototyping and customization.
o Created firmware for a number of devices, designed PCB for a few hardware solutions.
o Created WEB based software for warehouse keeping, production control, expenses calculation, market forecasting.

Transmag   **Santa Rosa, CA**
Contract
USB based BLDC motor controller's interface development.

o Designed GUI for BLDC motor setup and testing.
o Designed firmware for USB interaction and BLDC parameters read/write routines.
o Suggested USB part schematic design in order to provide reliabe USB communication.

NT-Mdt   **Moscow, Russia**
Software engineer
Scanning probe microscope and auxilary devices programming.

o Designed PCI driver and communication library for AFM controller. Created firmwarem, prorotype soft for AFM controller.
o Improved firmware and created UI for thermocontroller.
o Designed UI and control algorithms for bipotentiostat coupled with AFM.

Education

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

o Circuits & Electronics, Machine learning, Autonomous navigation, Kalman filtering, SAAS, Statistics with R, Node.JS, Angular.JS, Boostrap, JavaScript.

Open source projects participation

grambo-pi.com: Created expandable stackable PCBs set for RaspberryPi computer for robot prototyping.

xonotic.org: Created Blend2map 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.