Sergey Bashkirov

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Goal

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, Kalman filtering, machine learning, statistics, image processing

Technical proficiencies

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

Platforms: Linux, Windows, ChibiOs, FreeRTOS

Frameworks: Qt, Boost, Swing, WxWidgets

Microcontroller series: NXP, ST ARM7; Atmel AVR8; Analog Devices Shark DSP

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

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

Various: FTDI/CPLD Verilog programming, simulation, PCB design, Spice simulation, hardware debugging, mature soldering skill

Frameworks: Qt, Boost, OpenCV, Swing

Most recent work experience

Aist-NT Inc. <div align="right">**Novato, CA**</div>
Software Engineer

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

Transmag <div align="right">**Santa Rosa, CA**</div>
Contract
USB based BLDC motor controller's interface development.

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

NT-Mdt <div align="right">**Moscow, Russia**</div>
Programming engineer
Scanning probe microscope and auxilary devices programming.

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

Education

Moscow Institute of Physics and Technology <div align="right">**Moscow, Russia**</div>
Master of Science in Applied Mathematics and Physics

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