

# Alex Tarasov, Embedded Firmware Engineer

United States, +17019462460, alex@chrms.com

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## LINKS

[Personal web site](#)

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## PROFILE

Motivated embedded software and hardware engineer with 9+ years of experience in developing and deploying innovative embedded systems. Expertise in designing custom hardware, firmware development, and leading cross-functional teams. Proven track record in Industrial IoT, UAV systems, and smart devices.

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## TECHNICAL SKILLS

- **Programming:** C/C++, Python, Go, Bash, Git, CMake
  - **Embedded Systems:** STM8, STM32, nRF52, nRF9160, BareMetal, FreeRTOS, Zephyr, ChibiOS
  - **Hardware Design:** KiCAD, Altium, Flex PCBs, ARM-based designs
  - **Networking & Communication:** LoRa/LoRaWAN, UWB, BLE, Sub-GHz, CAN, MODBUS, RS485
  - **Platforms & Tools:** Embedded Linux, SCADA integration, GPRS, GNSS, USB Power Delivery
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## EMPLOYMENT HISTORY

2022 — 2024

### Hardware & Firmware Developer for Aviation, W-Electronic Technology

- Designed and debugged devices for jet-powered UAVs, including:
  - 1 Gbps Ethernet switches, custom flight controllers, and pitot differential pressure sensors.
  - CAN-enabled navigation modules (GNSS, magnetometer) and programmable buck-boost converters.
  - BMS modules with USB Power Delivery and flex PCBs for embedded electronics.
- Delivered projects for external clients, including:
  - LTE-M/NB-IoT GNSS tracker for Serbian Telecom.
  - Smart lock devices for a Dutch client.

2019 — 2024

### Team Lead & Embedded System Engineer, Service-Gazification

- Led a team of five developers to create IIoT devices for oil and gas facilities (Amur and Omsk GPZ).
- Developed a custom encrypted LoRa-based protocol supporting 22,000 devices over 10 sq. km.
- Designed ARM-based Base Stations with UPS, 5G modems, SCADA integration, and multi-channel LoRa modules.
- Deployed an indoor positioning system achieving ~0.5m accuracy with UWB technology.
- Collaborated with cloud teams to transition monolithic architecture to microservices.

2015 — 2017

### Embedded System Engineer, Aerostart

- Developed gyro-stabilized systems for onboard camera units using NVIDIA Jetson TK1.
- Built firmware and conducted field tests on Cessna planes for powerline detection and inspection.

2015 — 2016

### Hardware & On-Device Engineer, anki.co Startup

Designed and brought to market automatic plant-watering and pet-feeding devices with cloud connectivity.

2015 — 2019

### Embedded System Engineer, Exetech

Designed HVAC controllers for server rooms and production processes, including casing molding and equipment calibration.

2010 — 2024

### Embedded System Engineer, Freelance

- Delivered hardware and firmware prototypes, including:
  - Autonomous lighting systems for government river and sea administration.
  - Control systems for vending machines, industrial inverters, and high-power furnaces.
  - Battery chargers, SCADA-integrated solutions, and custom RISC-V HAL libraries.

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## EDUCATION

2008 — 2012	<b>Bachelor's, Ural Federal University</b> Electrical & Electromechanical Engineering
2012 — 2014	<b>Master's, Ural Federal University</b> Signal & Image Processing in Radio Systems
2015 — 2019	<b>Postgraduate, Ural Federal University</b> Electrical & Electromechanical Engineering

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LANGUAGES	Russian	Native speaker	English	C1
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## VOLUNTEER/PUBLIC DOMAIN WORK

2018 — 2018	<b>Book "C for Embedded Systems"</b> A 300-page book on embedded systems programming
2014 — 2016	<b>Founder of Hardware Engineering Club</b> Led extracurricular activities in robotics, PCB manufacturing, and computer vision.
2017 — 2017	<b>Course Creator</b> Developed practice-oriented courses for IoT, STM32, and modern embedded system programming.
2019 — 2024	<b>IEEE Conference Reviewer</b> IEEE Ural-Siberian Biomedical Conference
2018 — 2020	<b>Mini-Course Author</b> Delivered EU student workshops on IoT, computer vision, and driverless cars.

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## INTERNSHIPS

2014 — 2014	<b>Computer Vision Summer School</b>	
2018 — 2018	<b>ASRTU Sino-Russian Micro/NanoSat Camp</b>	Harbin
2015 — 2015	<b>11th International CDIO Conference</b>	Chengdu