Vasilii Podlesnyi Cracow, Małopolskie, Poland

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Hardware Design Engineer

- 8+ years of hardware engineering in robotics, healthcare, IoT and motor drivers.
- Created a robotic complex for diagnosing water pipes and heating mains.
- Experienced in low-volume production (up to 1000 devices/year).
- Led a team of 4 engineers in an R&D project for robotics and biomechanics.

Technical Expertise

- Development tools: Altium Designer
- Simulation tools: LTSpice, MicroCap, Cadence Sigrity
- Power management: Power budget calculation, BMS
  - Non-isolated: Buck, Boost, Buck-Boost, LDO, Synchronous
  - Isolated: Flyback, Forward, PoE IEEE 802.3af
- Motor Drivers: PMSM, BLDC, DC (up to 10kW)
- Digital interfaces: UART, SPI, I2C, CAN, RS422/485
- High-speed interfaces: DDR3, USB3.0, RGMII, Ethernet, SATA, PCIe, HDMI
- Analog schematic design: ADC, DAC, filters, amplifiers
- RF: BLE, Wi-Fi, RFID, NB-IoT, GSM, LoRa
- Industry standards: FCC, UL 6200, UL 840, IEC 60601-1
- Lab Measurement Equipment: Oscilloscope, Spectrum Analyzer, Electronic Load

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Work Experience

Hardware Design Engineer | HiQo Solutions, Inc. | Feb 2022 - Present (2y 4m)

Delivered IoT projects for Fortune 500 clients in a global tech company, under NDA.

- Optimized PCB design and BOM to increase product battery lifetime by 1.5-2 times.
- Improved the routing of a legacy design and passed EMC tests with a 2x safety margin.
- Implemented DFM approaches to significantly improve PCB assembly quality.
- Designed a gateway from scratch and optimized for low-volume production (1000 devices).

Russian State Center for Robotics and Technical Cybernetics | Mar 2021 - Feb 2022 (1y)

Head of Sector (5m)

Promoted to Head of R&D for marine and agricultural robotics projects.

- Led a team of 4 engineers in an R&D project studying the biomechanics of sea creatures.
- Organized the low-volume production of 1000 agricultural educational robots per year.
- Reduced the onboarding period of newcomers by 3 times by organizing workflows.
- Implemented an employee motivation system that decreased employee turnover by 50%.

Senior Hardware Design Engineer (8m)

The world's first autonomous underwater vehicle “Vityaz-D” dived to the bottom of the Mariana Trench.

- Doubled onboarding speed by organizing knowledge base.
- Conducted field tests and troubleshooting in harsh weather within 3 months.

Senior Hardware Design Engineer | SPBU Dynamics LLC | 2019 - 2021 (2y)

Developed Russia's first inspection robotic complex for diagnostics of water pipes and heating mains.

- Led robot hardware development from scratch, releasing the prototype within 6 months.
- Prototype was purchased by State Unitary Enterprise "TEK SPb".
- Collaborated with mechanical engineers to reduce electronics assembly time by 4x.
- Conducted field tests and hardware troubleshooting within 5 months in harsh conditions.

Hardware Design Engineer | Russian State Center for Robotics and Technical Cybernetics | 2017 - 2019 (Part-time) (2y)

The project of Russia's first rowing machine for astronauts on the International Space Station. The project "Cardio Robot" for the development of a robot for cardiopulmonary resuscitation.

- Produced PMSM motor controllers up to 1.5 kW meeting space EMC standards.
- Experienced in full-stack engineering - software, hardware, and mechanical design.

Education

- MSc, Mechatronics and Robotics, Peter the Great St.Petersburg Polytechnic University, Russia.
- BSc, Mechatronics and Robotics, Peter the Great St.Petersburg Polytechnic University, Russia.

Courses & Certifications

- Introduction to Power Electronics, University of Colorado Boulder, Cred ID ZUJCLEDSWY7S.
- Converter Circuits, University of Colorado Boulder, Credential ID FMDGFD38REYC.
- Teledyne LeCroy SI Academy, Essential Principles of SI (EPSI).
- Teledyne LeCroy SI Academy, Advanced Gigabit Channel Design (AGCD).
- Introduction to BMS, University of Colorado Boulder, Credential ID T3EKZU87JHEK.
- Advanced PCB Layout, FEDEVEL Academy, Credential ID 1c754a17003c8a6f4790875f6.

Patents

- Simulator for mastering manual surgical skills on the cerebral region of the head in a real topographic and anatomical environment - RU 190669 U1.

Other

- Visa is required.
- Languages: English - full professional proficiency | German - professional working proficiency.