

Vasil Borisov

Electro-Technical Officer

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PROFESSIONAL PROFILE

Electro-Technical Officer with 14+ years of seagoing experience across research, passenger, container and tanker vessels. Currently serving as sole ETO aboard Schmidt Ocean Institute's R/V Falkor (too), responsible for electrical power, automation, propulsion control, navigation/communication systems and integration of scientific equipment.

Strong background in fault finding, system upgrades, industrial communications and AV/IT integration, combining extensive marine electrical experience with software and networking skills.

CORE SKILLS

Marine Electrical & Power Systems

Marine Power Generation & Distribution · HV/LV Systems · Generators · AVR/PMS · Switchboards · UPS & Battery Systems

Automation & Control

PLCs · VFDs · Propulsion Control · Machinery Automation · Control & Instrumentation

Navigation, Instrumentation & Communications

NMEA Protocols · Modbus · CAN/CANopen · RS-232/422/485 · TCP/UDP · MQTT · Ethernet · 4-20 mA · PT100 · Encoders · Proximity & Process Sensors

Research & Marine Systems

Scientific Power & UPS Systems · A-Frames · Winches · Cranes · Bridge/Navigation Equipment · Sensor Integration · Commissioning

Software & Systems Engineering

Swift · Python · C · TypeScript · Raspberry Pi · Linux · Git/GitHub

PROFESSIONAL EXPERIENCE

Schmidt Ocean Institute – R/V Falkor (too) - Electro-Technical Officer | 2022-Present

- Sole ETO responsible for the operation, maintenance, troubleshooting and continuous improvement of the vessel's electrical, automation, propulsion control, navigation, machinery and scientific support systems.
- Manage power generation and distribution systems up to 690 VAC, including six diesel generators, DEIF AVR systems, Höglund PMS, switchboards, VFDs, UPS and battery systems, and emergency power arrangements.
- Maintain and troubleshoot Voith Schneider propulsion, tunnel and azimuth thrusters, cranes, PLC-controlled A-frame systems, scientific winches, and associated control, instrumentation and safety systems.
- Support the integration, commissioning and troubleshooting of scientific equipment and temporary installations, including electrical supplies, control interfaces, instrumentation and communications.
- Lead complex fault finding, system modifications and technical upgrades in cooperation with manufacturers, service engineers and vessel departments, working across electrical, automation and communications systems.
- Manage planned maintenance activities, technical records, electrical spares and procurement, including coordination of service attendance, equipment upgrades and new installations.
- Work closely with bridge, IT, ROV and science teams to support vessel operations, scientific missions and the reliable operation of critical onboard systems.

Royal Caribbean International – Harmony of the Seas - 2nd Electrical Engineer | 2018-2022

- Maintained and troubleshooted 11 kV high-voltage and low-voltage power systems, ABB Azipod propulsion, generators, switchboards, transformers, bow thrusters and automation systems.
- Promoted from Electrical Engineer to 2nd Electrical Engineer; responsible for electrical aspects of the bow-thruster retrofit during the 2021 Cádiz dry dock.
- Developed a Python tool to automate insulation-resistance fault calculations, reducing manual processing and operator error.

Previous Maritime Engineering Experience | 2012-2018

Saga Cruises – Electronics / AV-IT Engineer

Communication, navigation, IT and electronic systems aboard Saga Pearl II.

Atlantic Container Line – Electro-Technical Officer

Propulsion, power generation, automation, environmental, cargo and machinery electrical systems aboard Atlantic Star.

Thenamaris – Electrical Engineer

Electrical power, automation, motors and navigation systems aboard product carriers; dry docks, retrofit projects and inspections.

Additional Technical Experience

ICS – Integrated Computer Systems - Partner / Technical Projects | 2009-Present

Worked on computer systems, hardware, software and technical projects before and alongside my maritime career, including Linux systems, hardware diagnostics, embedded systems, instrumentation, C and Raspberry Pi.

PROFESSIONAL TRAINING & CERTIFICATIONS

Electro-Technical Officer (Unlimited) · High Voltage Training · ABB Azipod Technical Training – Helsinki · Software Architecture Principles & Practices – Carnegie Mellon University SEI · iOS & Swift Development · C Programming

EDUCATION

Nikola Vaptsarov Naval Academy – Varna, Bulgaria

MSc – Simulator Engineering in Maritime, Transport and Aviation – In progress

BSc – Ship Electrical Engineering | 2007-2012

High School of Mathematics “Dr Petar Beron” – Varna, Bulgaria

Secondary Education – English & Mathematics | 2002-2007

SELECTED SOFTWARE & ENGINEERING PROJECTS

Extasy Complete Navigation - Creator / Software & Systems Engineer | 2023-Present

Swift · SwiftUI · NMEA 0183 · AIS · UDP/TCP · MapKit · XCTest

- Designed and developed a real-time iOS/iPadOS sailing navigation and racing system integrating marine instrumentation, AIS and network data.
- Developed telemetry processing, source arbitration, sensor-health monitoring, communication diagnostics and connection recovery.
- Implemented polar-based VMG/VMC, lay-lines, start-line geometry, wind-shift analysis and automated testing with on-water validation.

Sowify – Serial Over Wi-Fi - Software & Hardware Engineer | 2022-2023

Swift/UIKit · Python · Raspberry Pi · MQTT · RS-232/422/485

Portable field diagnostic system providing bidirectional serial access, remote configuration and fault diagnostics from iOS through Raspberry Pi/MQTT.

MarineSimulator - Creator / Software Engineer | 2025-Present

Swift · SwiftUI · NMEA 0183 · UDP/TCP · Network.framework

macOS NMEA 0183 test bench generating coherent marine instrument data with realistic rates, fault injection, diagnostics and automated UDP/TCP loopback testing.

MLM No Limit - Creator / Sole Software Engineer | 2025-Present

- Designed, developed, deployed and currently maintain a production platform comprising a Next.js web application and published iOS and Android applications.

mlmnolimit.com · [App Store](#) · [Google Play](#)

LANGUAGES

Bulgarian – Native · English – Fluent

HOBBIES & INTERESTS

- Yacht racing – active participation in local and international regattas with our own sailing yacht
- Music – playing guitar as a creative outlet