

Vasil Borisov

Electro-Technical Officer

Industrial Systems & Software Engineer

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PROFESSIONAL PROFILE

Electro-Technical Officer and software engineer with 14+ years of experience across marine electrical engineering, automation, control systems and technical troubleshooting. Currently sole ETO aboard R/V Falkor (too), while independently designing and developing real-time navigation, diagnostic, simulation and production web/mobile software. Combines practical industrial systems experience with software engineering, communications, networking and root-cause troubleshooting.

CORE SKILLS

Electrical & Automation

Marine Power Generation & Distribution · HV/LV Systems · Generators · AVR/PMS · PLCs · VFDs · UPS & Battery Systems · Propulsion Control · Automation & Control · Industrial Instrumentation

Industrial Communications

Modbus · CAN/CANopen · RS-232/422/485 · MQTT · NMEA 0183 · TCP/UDP · Ethernet · Serial Communications

Software Development

Swift · SwiftUI · UIKit · TypeScript · React · Next.js · React Native/Expo · Python · C · SQL

Platforms & Tools

Raspberry Pi · PostgreSQL/Supabase · Git/GitHub · Vercel · GitHub Actions · Linux · Xcode · iOS/iPadOS · Android · macOS

PROFESSIONAL EXPERIENCE

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

- Sole ETO responsible for operation, maintenance, troubleshooting and improvement of electrical power, automation, propulsion control, bridge/navigation and machinery systems.
- Responsible for power generation and distribution up to 690 VAC, including six ~2 MW generators, VFDs, UPS/battery systems and emergency power.
- Maintain and troubleshoot Voith Schneider propulsion, tunnel/azimuth thrusters, cranes, PLC-controlled A-frame and scientific winch/control systems.
- Lead upgrades, commissioning and complex troubleshooting with manufacturers and service engineers, including DEIF digital AVR systems, Höglund PMS and science UPS/power systems.

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

- Maintained and troubleshoot 11 kV/HV-LV power generation and distribution, ABB Azipod propulsion, generators, switchboards, transformers, bow thrusters and automation systems.
- Promoted from 3rd 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 and cargo/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.

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

Ongoing involvement in computer systems, software and engineering projects alongside my maritime career, spanning Linux systems, hardware troubleshooting, instrumentation, ROV/sailing projects and embedded development using C and Raspberry Pi.

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 yacht instrumentation over NMEA 0183 and UDP/TCP, with an Apple Watch companion.
- Implemented a concurrent telemetry pipeline supporting NMEA/AIS message formats with checksum validation, source arbitration, sensor-health monitoring and connection recovery.
- Developed polar-based VMG/VMC, lay-lines, start-line geometry, wind-shift analysis and real-time performance calculations.
- Built live communication diagnostics and extensive automated testing with 600+ tests and on-water validation.

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

TypeScript · React · Next.js · React Native/Expo · tRPC · PostgreSQL/Supabase · Vercel

- Designed, developed, deployed and currently maintain a production platform comprising a Next.js web application and published iOS and Android applications.
- Architected a shared TypeScript/tRPC backend and PostgreSQL database with authentication, role-based authorisation and database security.
- Implemented cross-platform authentication, notifications, video learning, scheduling, surveys/checklists, administration and GDPR/audit functionality.
- Operate staging and production environments with automated testing, CI/CD and mobile OTA deployment across a shared web/mobile monorepo exceeding 100k lines of production TypeScript.

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

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.

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

PROFESSIONAL TRAINING & CERTIFICATION

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

ADDITIONAL MANAGEMENT EXPERIENCE

Oriflame Cosmetics Bulgaria

Independent Partner / Manager | 2020-Present

Manage and support a network of customers and consultants through communication, product training, sales support and development activities.

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