Ali Torabi software engineer

1 Overview

I build digital products, share knowledge, and help others create. I'm deeply passionate about programming, engineering, and continuous learning — always pushing to master new technologies and understand how things work from the ground up. I enjoy bridging practical skills with digital innovation, from building software frameworks like Fireback to welding, electrical systems, and construction. For me, creating — whether it's code, a tool, or a physical structure — is both a craft and a lifelong pursuit of excellence. Staring programming at age 9, I love to build, code constantly which has been so far without stop through most of my life and career.

2 Unique Capabilities

- Conduct technical interviews and assess candidates during the recruitment process
- Lead engineering teams or operate as a senior individual contributor within existing teams
- Rescue delayed or high-risk projects by stabilizing scope and driving timely delivery
- Build and deliver products from scratch as a lead developer, from concept to production
- Collaborate effectively with cross-functional teams as a strong and reliable team player

3 Programming Languages

Over the years, I have had encountered different programming languages, but overall I became expert in **Go**, **C**, **JavaScript** and **Typescript**. These languages give me the possibility to build for Web, Backend, Front-end, Mobiles, and Embedded devices. My C# and PHP experience albeit very wide, they are practically retired.

3.1 Golang

Extremely passionate about Go as both an ecosystem and a language—simple, fast, compiled, and efficient. I have built and contributed to dozens of projects throughout my programming journey, and I still question what could reach the same level of reliability in the future. My favorite features include cross-compiling, goroutines, and its simple package management system. I use Go in most cases, especially for desktop applications, CLI tools, shared libraries, web servers, and database-related tasks.

Besides many commercial projects and contracts, Fireback[1] and EmiCompiler[2] are two flagship open-source products I have developed. Fireback can be considered one of the most opinionated and complex frameworks in the Go ecosystem, which can accelerate developing most commerical apps by many times.

3.2 JavaScript(?TypeScript)

When I was learning VBScript, I've realized also a language is gaining popularity which is called JavaScript. At the time VBScript was also actively used for web page interactions. My experience with JavaScript says it's gonna be around for decades to come, due to widespread, loosely typed features. Many people criticize the language for its lack of type system, that's exactly what has made it so famous and widely accepted. In fact that's its power, not weakness. Amount of lines of code I have written in JavaScript is almost countless, both in node.js, browser, electron.js, react native, ionic, pure vanilla JavaScript, and yet believe it or not, years of writing jQuery and maintaining custom created JavaScript libraries.

3.3 PHP

PHP is one of the languages that I have started my career with, earlier than 2006. Used PHP for multiple projects on proprietary CMS and CRM system, as main developer for few years. Later on in another series of WordPress custom theme development it was one of the main focuses. I have migrated a major commercial platform internal services from PHP into Golang in recent years. PHP is a magic language, easy, a simple file and it works. It got popular for the fact allows plugin systems to work perfectly, that's why many successful shop platforms, such as Magento and Prestashop are built on top of it. Loved the syntax, and its straightforward OOP model.

3.4 C

I have used C across different projects, all in microcontroller environment. I have good experience on writing reliable, memory leak free code on electronic devices. For

[1] https://github.com/torabian/fireback

[2] https://torabian.github.io/emi/playground

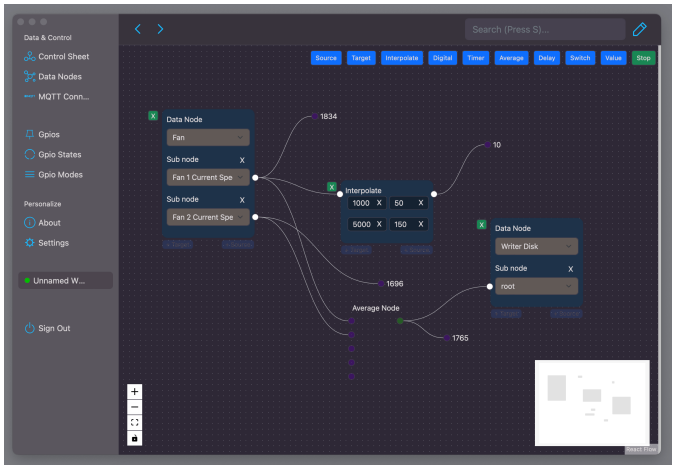

Figure 1: Esp Studio, Visual logic creation for automation

me C is very straightforward, yet waiting to see if any language can become close to its usability in small memory systems. Mostly focused on esp-idf platform, have a good understanding of general purpose c code for small memory devices.

4 Major Frameworks

Learning a language in my opinion is a good step to be able to start, but in practice there are libraries that either build or consume, and some of them require significant amount of time to be invested.

4.1 Angular 1...18

Started Angular since version 1 in plain JavaScript. Done 2 projects in AngularJs, created build system, cli tools for it. After release of Angular 2, I had to rewrite the project into Angular 2, which was really difficult, basically a deep rewrite. I have worked on many commercial projects with Angular, as well as Angular Material (CDK). The strength of Angular is its structure, and I love frameworks which do not depend so much on external libraries and Angular has done a perfect job in this area.

4.2 React

React and React ecosystem undoubtedly are major player in terms of front-end, server side rendering, and of course mobile development. I have started working with react since a decade ago. I loved the fact, that it's using classes, because I was coming from C# and Angular background. React major strength is that it has a small footprint, and it's a perfect tool for building fast UIs. In early days, libraries available to it were not that reliable, but in 2020+ it has changed mostly. Worked many commercial projects on react and its' ecosystem, it's one of the widest frameworks I have used alongside React Native in my career.

4.3 React Native

I have encountered React Native from its early days, when installing and running a hello world was a major challenge. Still remember, when we were hiring for React Native project at the time, a candidate just was selected,

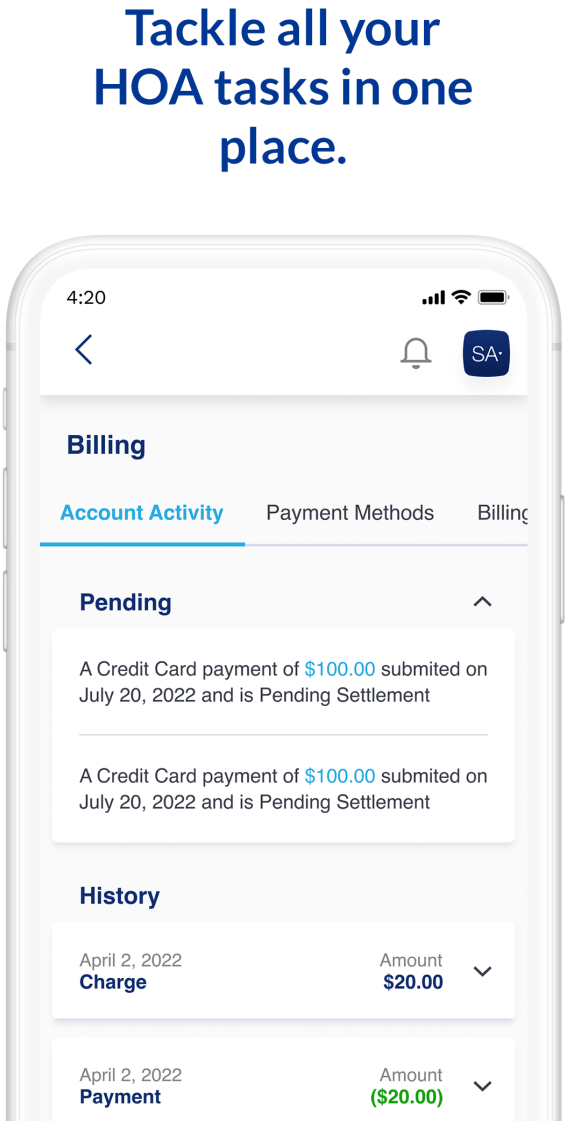

Figure 2: HOA My app, an full app I have built to do HOA operations for United States

by one my colleagues due to fact he could run it in first few hours. Many things have changed ever, I have built dozens of apps in past 10 years which are in React Native, in many different categories.

4.4 ESP-IDF

Deep experience with ESP series micro-controllers using vendor SDKs (ESP-IDF). Worked extensively with advanced Wi-Fi (station/AP, provisioning, hotspot), BLE (GATT server/client), and dual-mode connectivity for IoT devices, primarily in home automation and energy systems. Experienced in FreeRTOS-based development, low-power modes, OTA updates, secure communication (TLS), MQTT/HTTP protocols, peripheral integration (GPIO, UART, SPI, I2C, ADC), and real-time device control.

4.5 Node.js (ecosystem)

Deep and competent knowledge has been built around the node.js ecosystem, to build different kinds of products,

mostly focused on traditional backend. I have done pure node.js scripting in its early days, then done projects in Sails.js framework, and later on Nest.js. Nest.js is the missing part for commercial products in node.js ecosystem, and honestly a copy of Angular in backend side. I can fully conduct entire project in this.

5 Databases

Through my career I have faced usage of different type of databases, here I'll list the ones I feel most confident.

5.1 MySQL

Used MySQL with PHP, until to this day is a go to database for me. Worked with it's advanced features, and maintained databases, up to 100GB alone in my career. I love to write queries and avoid ORM, if possible in the projects, and I would prefer this product for its reliability.

5.2 SQLite

SQLite has appeared very handy and useful in many places. From mobile applications I have written, until micro-controllers that the only option was SQLite to store data on them. SQLite is a very powerful database, and I have reduced the database maintenance on a few projects to minimum by using it, and even storing files in it. It's quite compatible with MySQL with some small changes, and this gives the power to run similar, if not same structure on a cloud backend and micro-controller project with small amount of ram.

5.3 MongoDB

Faced Mongodb in couple of projects since its inception. Having an overall understanding of its power and limits, can be used for places the data structure is unknown, or snapshots of data is needed instead of relations between them. I am not an advanced user, albeit writing some queries against existing through my career here and there.

6 Libraries

Smaller than programming languages and frameworks related to them, are the libraries which worth to mention.

6.1 Cypress testing framework.

Got hands on experience on the framework since it came out, Cypress is a great tool for doing all kind of testings. I have used it successfully both on testing front-end projects, Angular, React, and websites, as well as it used it few times for running integration tests with backend. A perfect solution to write e2e tests overall, with some challenges on cookies in the past.

6.2 Three.js (React Three Fiber)

I have experience with Three.js and React Three Fiber, creating interactive 3D web applications and immersive VR/AR experiences. I build dynamic scenes, integrate

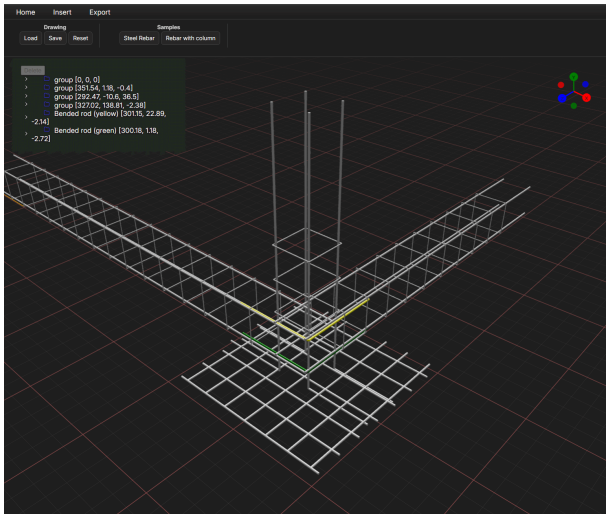

Figure 3: Izadom 3D design rebar join and column demo

3D models and animations, and craft engaging, responsive interfaces that combine visual appeal with real-time interactivity. Take a look at this project[3] for one of my major works using Three Fiber and React.

6.3 Docusaurus (Project documentation)

Experienced in building and maintaining documentation platforms using Docusaurus. Skilled in configuring versioned docs, custom themes, and plugins, as well as writing and structuring Markdown/MDX content. Familiar with integrating search, localization (i18n), and deployment workflows (CI/CD), ensuring scalable, well-organized, and developer-friendly documentation sites.

6.4 Katex

Katex is formula writing library, and is doing a perfect job when you need to work on scientific projects. I've used it in a product that managed question bank, and authors needed to write the formulas down, and we moved away from embedding pictures into using Katex.

6.5 Maps & Geography (Google, Openstreet map)

Hands-on experience integrating Google Maps and OpenStreetMap in React, React Native, Angular, and vanilla JavaScript. Implemented custom markers, clustering, and interactive overlays (polylines, polygons, drawing tools), with event handling and map state management. Worked with Geocoding/Reverse Geocoding APIs, address autocomplete, and coordinate transformations. Familiar with map performance optimization, mobile responsiveness, and integration of third-party location services.

6.6 Jest, React Testing Library

Writing tests for logic control, mostly on non-ui interactions is a favorite task for me. When there are complicated calculations, for example in time-series operation, I'd write tests to make sure pure functions are working

[3] `https://torabian.github.io/izadom`

properly. React testing library also seems promising, I have used it to test the logic of components rendering, in React and React Native.

6.7 TinyMCE Text Editor

Many projects over past 2 decades needed a rich text editor, and TinyMCE is my favorite. I am keen to see if there will be an easy replacement, such as Gotenberg in WordPress, but still TinyMCE is one of top options to go. One of challenges I had was adding formula writing to it, using Katex and it really made me to be very focused until getting the task done.

7 Software Skills

As a developer, I am not only focused on creating software, but also on learning other people's products to improve my capabilities and gain inspiration.

7.1 Autodesk Fusion

Fusion is an Autodesk tool used in CAM design, and recent updates have added electrical design capabilities. I have strong experience with the product, being able to create industrial components end-to-end, including preparing blueprints and toolpaths for machining parts.

7.2 KiCad

KiCad is one of my favorite tools for PCB design. It is open-source and, while it lacks some advanced features, it is more than sufficient for most 2-layer PCB projects, which I typically build as prototypes for clients or hobby work. I have used this software extensively over time.

8 Protocols, Standards, Processes

Working across different products and industries, I have built solid knowledge of various protocols, standards, and system-level communication patterns.

8.1 MQTT

Deep experience building MQTT-centric systems requiring real-time full-duplex communication between servers, devices, and client applications. Implemented both clients and on-premise brokers. MQTT is actively used in my own products, including Meshora.

8.2 Bluetooth (BLE)

Strong experience with Bluetooth Classic and BLE across ESP microcontrollers, STM-based systems, Ubuntu environments, and React Native applications. Skilled in GATT client/server architectures, device provisioning, pairing and bonding, and real-time data exchange. Worked with low-level drivers, vendor SDKs, and higher-level mobile libraries ensuring reliable cross-platform connectivity and performance.

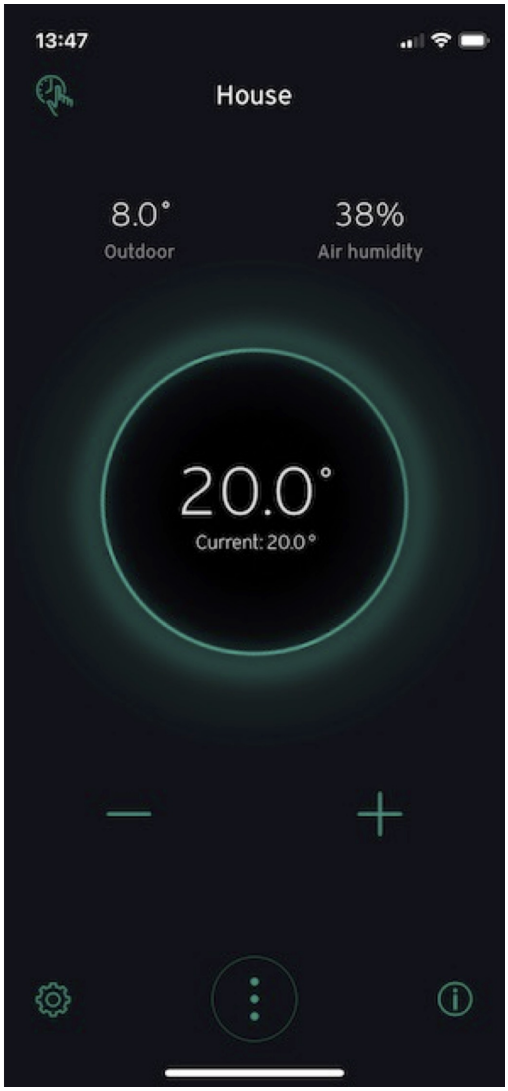

Figure 4: Heating control app

8.3 E-Commerce Systems

Worked on systems such as **WooCommerce** and **PrestaShop**, later applying this knowledge to custom-built platforms using Node.js and Golang. Experience includes inventory management, caching strategies, custom fields, recursive category structures, and database modeling for scalable commerce systems.

8.4 OpenTherm

Deep IoT experience with the OpenTherm protocol, working as both Master and Slave. Built communication layers, simulations, and performed debugging on real boiler systems using the protocol.

8.5 Internationalization

Specialized in building internationalized systems across web, mobile, desktop, and documentation platforms. Experience includes RTL/LTR support, custom calendar systems, and multilingual database architectures serving region-specific product configurations.

8.6 WebSocket

Early experience with long-polling chat systems before WebSockets became standard. Built real-time systems using WebSockets for text and binary communication, including load-balanced notification systems and audio streaming.

8.7 App Store and Google Play Management

Managed full application release pipelines from codebase to production stores. Experience includes CI/CD setup, store configuration, Apple approval processes, and compliance with design, behavior, and content requirements.

8.8 Cross-platform Data Synchronization

One of my strongest system design skills is synchronizing data layers across backend, mobile, desktop, and web applications while preserving a unified API structure and offline capability. Achieved through selective API design and running compiled Go/C components as system services.

9 Employements and Client Projects

I have experience both on contracting and full-time job positions for different industries, here you'll see an excerpt of places and contracts that I have made, name of some companies and projects is altered due to NDA signed before.

Lead Mobile Developer

Vaillant GmbH — Gas and Heatpump manufacturer
Feb 2024 – Mar 2026

Development of applications to control heat pumps and gas boilers for a German top efficiency heating products manufacturer. Created an Installator app for servicing/commissioning and an End user app for tenants to manage temperature, schedules, and alarms.

- Implementing search for fault codes and first-time process handling
- Integrating live monitoring directly via EBUS controllers for portable tablets
- Enabling end users to set room temperatures, weekly plans, and check system status
- Supporting API Developer program features like external pumps and cascading

Software Engineer

TOMSANAT LLC — Insurance / ERP SaaS Company
Feb 2023 – Feb 2024

Insurance company internal ERP tooling SaaS product built from scratch to convert insurance leads into customers. Created "Fireback", an opinionated backend framework (Gin, Laravel, Nest.js replacement) supporting rapid UI generation and complex routing.

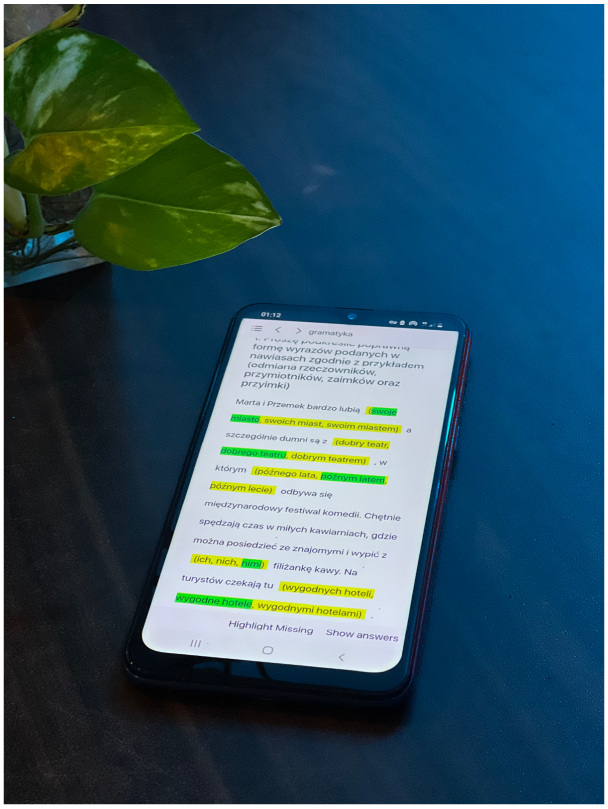

Figure 5: AcademyX Polish Version

- Creating a single executable CLI binary to reduce backend deployment pain
- Implementing frontend lazy loading, custom styling, search functionality, and keyboard accessibility
- Engineering the Fireback framework with multilingual support, SQL Pivot, gRPC, and built-in Socket entities

Front-end Engineer

VISA — Major European Investment Bank (Banking Platform)
Jun 2021 – May 2023

Highly complex front-end banking tool for auditing currency exchange operations for a major European investment bank.

- Handling rendering of nested objects with column locking and drag-and-drop reordering
- Engineering advanced searching, filtering, and backend-driven cascading custom sorts
- Designing multiple editing capabilities, view snapshots, and CSV/PDF export generation
- Creating expandable rows for extra details while maintaining strict visual alignment

React Native Developer & Team Lead

PIXELPLUX — Software Product Studio (US Market Clients)
Jun 2019 – May 2023

Led a team of 5–7 developers building multiple large-scale products for US markets, including real estate, education, healthcare routing, solar energy monitoring, accounting MVP systems, and esports tournament platforms.

- Mentoring developers and leading engineering teams across multiple products
- Implementing CI/CD pipelines using CircleCI and managing AppStore/Google Play deployments
- Integrating Swagger and gRPC services for scalable backend communication
- Building AcademyX system services with ABAC permissions, Zoom/Google Meet integration, and CI/CD binary installers
- Designing Teamtelefon system with call routing algorithms, contact sync, and Firebase serverless architecture
- Developing EverVolt dashboard with D3/SVG interactive charts, MPPT/battery logic, and hardware data synchronization
- Building Gizer esports platform with NGRX state management, canvas/Lottie animations, and real-time webhook integrations
- Creating Minifirma MVP with SQLite storage and camera-based invoice processing modules

Full-stack Engineer

WEBELIAN — Software Engineering Studio (Global Clients)
Apr 2018 – Jun 2019

Worked on diverse full-stack systems including airport check-in kiosk interfaces, industrial jewelry engraving tools for SISMA machines, open-source UI components, and real-time network latency visualization systems used across Japan and the US.

- Designing airport kiosk UI with on-screen keyboard, strict tab navigation, joystick control logic, and accessibility audio feedback
- Replacing legacy jQuery systems with React and building advanced Canvas-based text rendering and collision/protrusion detection for engraving tools
- Developing real-time D3 heatmap systems for network monitoring, integrating time-series APIs, and managing state with React-Redux and RxJS
- Maintaining and contributing to open-source TimePicker component including issue handling and pull request management

Figure 6: Evervolt controlling app for Panasonic

PHP Developer

NETWARE STUDIO INC — Software & IoT Solutions Company
Jun 2015 – Feb 2017

Developed multi-purpose localized WordPress templates (_tkpersian) to streamline project creation and built full-stack IoT smart home solutions integrating embedded devices and web systems.

- Engineering reusable WordPress theme components extending the Underscores (_tk) open-source framework
- Designing hardware/software systems to access IoT devices over local networks
- Building administrative dashboard tools for device management
- Developing drivers connecting embedded devices with computer systems

C# & PHP Developer

Lohebartar Publication — Educational Software Publisher
Jan 2009 – Apr 2014

Windows-based examination desktop application originally built independently and later adopted by Lohebartar Publication for school entrance exams, distributed at scale with over 100,000 copies sold.

- Handling end-to-end technical business implementation using C# and Multimedia Builder
- Developing an online PHP activation code tracking system
- Building a lightweight internal CRM for managing students and teachers

10 Language Skills

Learning languages has been a long-term personal interest of mine. Over the years, I have consistently invested time in improving my ability to read, write, and communicate across multiple languages.

11 Language Skills

Language learning has been a long-term personal interest of mine, and I have consistently invested time in improving my ability to communicate across multiple languages. I am a native speaker of Persian (Farsi), with strong professional writing skills. In English, I operate at a professional level, regularly using it for technical discussions, documentation, and day-to-day communication in software development. I have an intermediate command of Polish, allowing me to handle real-life situations, administrative tasks, and construction-related topics, supported by passing the national language exam. I also have working knowledge of German and Turkish, enabling basic communication and understanding in everyday contexts. Additionally, I am currently developing my Russian skills, with a focus on reading and passive comprehension at an early stage.

12 Construction Skills

I am capable of independently managing the full process of building single-family concrete houses in compliance with Polish regulations.

12.1 Heating Systems (G3)

Design and implementation of underfloor heating, gas systems, and multi-room setups using solutions such as Vaillant and Viessmann. Experienced in heat load calculations, hydraulic system design, and PEX piping layouts including manifolds, pumps, and boilers. Skilled in zoned and smart control systems.

12.2 Electrical Systems (G1)

Experience in residential electrical installations including circuit design, load calculation, panel layout, and wiring. Able to read and produce technical schematics, select protective devices, and ensure compliance with safety standards.

12.3 Smart Home Systems

Design and implementation of smart home solutions including lighting, heating, and security automation. Experience integrating IoT devices, sensors, and controllers for remote access, energy optimization, and scalable systems.

13 Licenses

In addition to my professional work, I hold several licenses that enable practical and technical operations:

- C and C+E driving license (EU)
- Motorboat and sailboat license (Poland)
- PADI diving license