PORTFOLIO IVAN - ZAKORETSKYI

WRITE AN INTRODUCTION ABOUT:

Ivan has an educational background in analytical chemistry and informatics & computer science. He has been working for the last 20 years in the domains machine building, petrochemical, and food & packaging. Roles that he has experience in are software engineer, industrial software engineer, automation engineer, commissioning engineer, Project lead, and Project manager.

Ivan is a senior specialist in the areas of PLC (including Siemens S5/S7, Simatic Step7, TIA Portal, Allen Bradley, Schneider, ABB), SCADA, HMI (including WinCC, and Zenon), LIMS, MES. In addition to these competencies, he is familiar with Waterfall, and Agile (Scrum/Kanban). He has obtained these experiences while working worldwide on multiple continents.

Ivan is available per 1st of September'19. He is flexible to move to The Netherlands and has no preference for a city or area. Technology is leading for him.

Ivan has given (only to) Connect Ways the right to mediate with Dutch companies.

:-:

WRITE AN INTRODUCTION ABOUT IN WHAT DIRECTION YOU WOULD LIKE TO DEVELOP YOURSELF Ways: I am looking for an **Industrial Automation PLC SCADA HMI Engineer Programmer** position. Here I can apply my knowledge and experience to carry out tasks with efficiency, professionalism, and cost-effectiveness.

| e | 10 - 04 - 1976 | Ivan Zakoretskyi |
|--------------|--------------------------------------|--|
| 斧 | ADDRESS: | Poltava Ukraine |
| © @ \$ | PHONE NR: E-MAIL: NATIONALITY: | +31 (0)6 40 96 16 34 Bart.hermsen@connect-ways.com Ukrainian |
| | | |

MOST RELEVANT EXPERIENCE, EDUCATION & SKILLS

| AVAILABLE: | 01-09-2019 | 2016 :: Present | Engi | ineering project manager. | | |
|-----------------------|------------|--------------------|--|---|---------------------------------|---|
| HOURLY RATE: | €x,- | | Rele | ease manager, scrum master, | , and project manager, ma | intenance of three e- |
| EXCLUDING | VAT | | com | nmerce teams of specialists (| up to 27 developers, and q | uality assurance engineers). |
| RELOCATION: | YES | | AB- | Soft LLC, Odessa — Developi | ment hardware and softwa | are project for US private, |
| WORLDWIDE | | | and | government customers. | | |
| | | | Imn | Jamontation & Commissioni | ing Engineer | |
| LANGUAGES: | | 2014 :: 2016 | Imp | Implementation of the Industrial Process Control Projects | | |
| | | | Acto | | ly integrated agra inductri | al holding with the povt main |
| | | | ASIC | used Forming Sugar product | ing integrated agro-industri | an notating with the next main |
| | | | 1000 | uses: Farming, Sugar product | ion, which and cattle, soybe | an crushing, and Bio-energy. |
| ENGLISH | | | Indu | Industrial Software Developer. | | |
| | | 2013 :: 2014 | Developed and implemented software and hardware projects of Industrial Safety with | | | |
| | | | transfer data to the Ministry of Civil Defense of Ukraine. | | | |
| | | | Safe | ety Technologies LLC, Poltava | a — the company is engag | ed in the implementation |
| VE | KY GOOD | | of ir | ndustrial safety projects for C | Dre-dressing, Chemical, Ga | s, and Oil facilities. |
| | | | | | | |
| | | | | | - | |
| | DUTCH | MOST RELEVAN | T EDU | JCATION AND COURSES | S: | |
| | | 1995 :: 1999 | Bac | helor of Science in Analytica | l Chemistry and Informati | CS. |
| | | | Graduate work: Software to visualize the process of titration of weak acids with | | | on of weak acids with |
| BEGINNER | | | stro | strong bases with data storing in the database. | | |
| | | | Polt | ava V.G. Korolenko NP Unive | ersity. | |
| | | 2016 :: 2016 | Svst | tem Architecture based on S | iemens Simatic Step7/TIA | Portal |
| RUSSIAN/ UKRAINIAN | | | Fdu | Education Centre of Siemens. | | |
| | | | Lviv | | | |
| | | | | | | |
| | | MAIN EXPERTIS | E: | HARD SKILLS | | SOFT SKILLS |
| | NATIVE | | | | | |
| | | Siemens/VIPA PLC (| SCL) | ••••• | Mentoring | ••••• |
| | | | | | | |
| | | HMI / SCADA (WinC | CC) | $\bullet \bullet \bullet \bullet \bullet$ | Multitasking | $\bullet \bullet \bullet \bullet \bullet$ |

EXPERTISE

MAIN EXPERTISE:

|) ● |
|-----|
| |
|) |
|) ● |
|) |
| |

COMPLEMENTARY SKILLS:

| Skill 7. Drawings, wiring diagram, 3D modelling | $\bullet \bullet \bullet \bullet$ |
|---|-----------------------------------|
| Adobe PS, AutoCAD, EPlan, SolidWorks | |
| | |
| Skill 8. Development of native applications | $\bullet \bullet \bullet \bullet$ |
| VB, Pascal, C, Java, using OOP, SQL, AWS, | |

What I do.

I actively participate in the whole systems/software development life cycle (SDLC) in systems engineering, industrial and information systems, and software engineering to describe a process from planning, development, testing, and to deploying and maintenance of information/industrial/process control systems.



I have a confident expertise at every point of software and hardware development life cycle, but I prefer to work directly on developing software, as Engineer Programmer.

Please review the list of my usual works/activities:

1. **Negotiating** with Customers, Business owners, Technologies Stakeholders, and **planning** an **automation project from concept to implementation**.

2. **Analysis** of the automation object, coordination with the Customer's Engineering and Technologist members for **preparation of technical specifications**;

3. Preparation of **architecture**, detailed **requirements**, **documentation** on the hardware components of the project and software, **network topology**, symbol table, **automation schemes**, operator **manuals**.

4. Development of software for programmable logic controllers (PLC) of various manufacturers (Siemens, Vipa, Schneider, Lonix, etc.) based on CodeSys and Simatic Step7. 5. Creation of human-machine interfaces (HMI) for personal computers and embedded panels in SCADA systems WinCC, TIAPortal, COBA, Zenon etc, for single range and for client-server networks.

6. Concept, design, development, installation, and maintenance of industrial security systems (ISS), laboratory information systems (LIMS) with connection to the dispatch system or manufacturing execution system (MES).

7. Selection and delivery of equipment, assembly of control cabinets, laying of communication and signals lines, and implementation of the data exchange through interfaces and protocols (Profibus, Profinet, ASI, TCP/IP, UDP, MPI, ModBus, RS232/485). 8. Creation of database structure, installation of servers or operator stations.

9. Except for new ones, also, modernization and restoration of legacy automation systems, integration of new sites into existing dispatching and management process control systems.

How I do it.

Development of Software for Programmable Logic Controllers (PLC).

According to programming, for firstly, I should be **acquainted** and understood the whole scope of **technical documentation** by the project. There are usually points to **discuss** with the internal or external **technologist** or **engineer**. It is necessary to process with the **algorithm** of each elementary automation object and the **technological process** as a whole.

Then, as usual, I am creating a dedicated **virtual machine** for each project, based on VMware Workstation on PC, or VMware Fusion on Mac. After that, into VM I setup required version of OS, tune it, then time to Excel (for SCADA data exchange), then install fit **Siemens software** (for example Simatic NET, Step7, Wincc) and required GSD files if it necessary for some **peripheral devices** like Profibus/ASI peripheral devices or frequency converters, e.t.c.

Depending on the **architecture**, I decide to use the existing **framework** or, develop a new one. However, as usual, it all starts with **configuring the hardware** in the HW inspector and creating **symbol table** of signals then.



Then finished and compiled hardware assembly I download into the **hardware simulator** to initial test and **verification**, and for Profibus/MPI/IP adressing. However, it is always good, if I have **real PLC** on a working table, due to fact, that in simulator a result can be different in contrast with on the real PLC.

So, after that, stars phase of **active development**. First step it is **processing with analog and digital inputs and outputs, peripheral IO**'s. All these data are storing in **data blocks** (DB). Then, in favor of analog signals, I create signals **smoothing processing** (Lag1st), set the **boundary** (warnings/alarms) and **expected** (set point) **values**.

Then it is time to create **functional blocks** (FB) of each elementary/atomic **node of the process**, like that many types of motors, valves, pumps, and any other devices/actuators or sensors. In addition, it is time to create FB/FC for each **control loops** according to the algorithm. These are objects, which are more complex. For example boilers, dispensers, PID controllers, conveyors, or other **technological components**.

Of course, I run the **continuous processes** in organization block **OB1**, and the exact and demanding/**interrupts**/Boolean **processes** in **OB35**.

Therefore, now everything is ready for the **implementation** of the **mathematical model** of the **technological algorithm** itself. As a rule, I program **continuous processes**, or **processes with interruptions**, or **cycles** with **sub-cycles**. It can be **linear** or **branching** processes.

So now, I have everything to **complete the controller program** step-by-step, according to the requirements of the algorithm. For sure, at **each development stage**, I **control** the amount of **processor memory** and the **program execution performance** in milliseconds.

After **acceptance testing** and **verification** of PLC program, there will be a next brave step – **integration** with **user interface** (UI), based on HMI/SCADA. And, this stage too, almost always can be pre-checked in the simulator.

How I do it.

Creation of Human-Machine Interfaces (HMI) based on SCADA.

At this stage, of course, I also need to understand the **technological requirements**. It is also necessary to make a choice in favor of the **touch panel** or PC-based **operator station** with one, or more screens. In the case of **distributed systems**, there is a need for a **client/server architecture** with **multiple staff SCADA stations**.



First of all I create a **connection with controllers** and **data sources**. Then I create a bunch of necessary **Tag Groups** and appropriate **Tags**, Excel helps and accelerates this step very well.

User interface creation begins with **screen sketches** analysis. Based on the existing framework, screens are creating with the **mnemonic scheme** of the **technological process**, with the necessary **graphic primitives** and with areas of **active elements**.

Next comes the **binding of internal/external tags** with active elements. Then - the implementation of interface elements, **visualization**, such as **menus**, transitions between **windows/screens**, entering **user access** data, and **setting technological parameters, settings rules/accesses** for Operator/Engineer/Manager, e.t.c.

Then time to the important, responsible and laborious part of creating a subsystem for applying and storing of **archiving messages** and **charts** based on **Alarm Logging** and **Tag Logging**.

Of course, at each stage, the interaction between **SCADA** and **PLC simulator** or **real controller** is checking, right up to the **final acceptance** after integration.









How I do it.

Installation and adjustment of Networks and Controls Cabinets.

Except design of architecture, detailed requirements, documentation on the hardware components of the project, network topology, selection and delivery of equipment, I have skills in the assembly of Control Cabinets, laying of Communication and Signals Lines. While my programs are ready, I feel free to support our Assembly/Mounting Engineers.



In this case, my **workplaces** can be not only in the office, even during the **start of development**. At the same time, I feel **comfortable** during **commissioning** together with the **Colleagues** and employees of the **Customer**. In any case, I can put the robe, arm myself with a scheme, a screwdriver, a signal analyzer, courage, and break into the field.



How I do it.

Drawings, wiring diagram, 3D modelling.

We have already talked about documentation several times. I can confidently use software (EPlan, AutoCAD, Visio and SolidWorks) to create technical content from presentation, concept, architecture, tech process or electrical circuitry, list of equipment and required hardware and cables, up to the volume solid visualization, creation, and rendering of objects.



Short description of several Projects.

Dispatching, Control and Life Support System.



Building automation based on smart home technology.

Purpose of the system: continuous monitoring and control of lighting, heating, and climate systems with elements of autonomous power supply.

Hardware and software: PLC: AMX, Echelon; Workstations: Panel PC, Stationary PC, TV, iPad. iPhone, iPod, WinCC; COBA, TPDesign Interface: Ethernet, Lonix, RS234/485.



Process control system for bilberry processing.

Complex automation of the blueberry processing line.

Purpose of the line: getting the finished product (blueberry paste) from frozen and fresh raw materials (berries) by hot filling in a glass bottle packaging.

Hardware and software: PLC: Vipa Speed 7 300 Series, Simatic Step7; Workstations: Simatic Panel PC, WinCC; Interface: Ethernet.



Process control system for bilberry processing.

Comprehensive automation of the line for the pasteurization of milk.

Goals of the line: getting the finished product (paste or pasteurized milk) from prepared and fresh raw materials (milk) by hot cavitation method with the next packaging in plastic containers.

Hardware and software: PLC: Vipa Speed 7, Simatic Step7 300 Series; Workstations: Simatic Panel PC, Zenon; Interface: Ethernet.

Process control of diffusion section of a sugar factory.



Single and double circuit sections of beet grinding and sugar juice preparation.

Purpose of the line: the grinding and mixing system of raw materials with the addition of chemical ingredients to produce products with accurate parameters of sugar content, dry matter and pH.

Hardware and software: PLC: Siemens 315-2DP, Simatic Step7; Workstation: PC, WinCC; Interface: Ethernet, Profibus.

Industrial control system of the pulp-drying department.



Automatic dual-circuit drying system for raw materials.

Purpose of the line: production of finished raw materials (dried pulp) by maintaining the temperature regime of gas burners and vacuuming due to cyclones.

Hardware and software: PLC: Siemens 300 Series, Simatic Step7; Workstation: PC, WinCC; Interface: Ethernet, Profibus.

Modernization of Husk Pelletizing process control system.



Automatic line for the preparation and granulation of sunflower husk.

Purpose of the line: the raw material is prepared by the method of drying and vacuuming and obtaining finished products by granulating while maintaining the volume, supplying raw materials and controlling the output moisture.

Hardware and software: PLC: Siemens PLC 300 Series, Simatic Step7; Workstation: PC, WinCC; Interface: Ethernet.

Automation complex for milk acceptance and storing stations



Four contour, scalable vacuum milk intake.

Purpose of the line: milk reception for production, flow control, temperature and bacteriological parameters, data transfer to MES.

Hardware and software: PLC: Vipa Speed 7, Simatic Step7; Workstation: PC, WinCC; Interface: Ethernet, Profibus.

Control system of vacuum apparatus.



Automatic complex of vacuuming of dry suspension from milk whey.

Purpose of the line: obtaining products with the required parameters of dry substances and moisture for packing in bags or on baby food production lines.

Hardware and software: PLC: Siemens 300 Series, Simatic Step7; Workstation: PC, WinCC; Interface: Ethernet.

Short description of several Projects.

Sugar-plant evaporation station control system.



Complex automation of five contour station of sugar juice evaporation. **Purpose of the line**: obtaining sugar syrup from juice for further production by supporting temperature, pressure, and vacuum with elements of energy conservation. **Hardware and software**: **PLC**: Vipa Speed 7, Simatic Step7; **Workstation**: PC, WinCC; **Interface**: Ethernet, Profibus.

Sugar-plant syrup centrifugation control system.



Centrifuge battery control system with support for mass-energy recovery. **Purpose of the line**: obtaining ready-made raw materials (sugar) from condensed sugar syrup by filtering from molasses and centrifuging, steaming, drying. **Hardware and software**: **PLC**: Siemens 300/200 Series, Simatic Step7; **Workstation**: Simatic Panel PC, PC, WinCC; **Interface**: Ethernet, Prifibus.

Automation of the next production sites: saturation, evaporation, pulping and filtering.



Turnkey automation of three sections of a sugar factory

and integration with neighboring areas.

Purpose of the sections: getting pure sugar syrup from the juice by cleaning by saturation, filtration and thickening for further use in obtaining sugar.

Hardware and software: PLC: Vipa Speed 7/Siemens 300 Series, Simatic Step7; Workstation: Simatic Panel PC, PC, WinCC; Interface: Ethernet, Profibus.

PCS for biodiesel production.



Automated biodiesel cooking control line.

Purpose of the line: production of bio-diesel fuel (methyl ether) from vegetable raw materials by adding chemical components, thermal control and technological phase separation.

Hardware and software: PLC: Siemens 200 Series, Simatic Step7; Workstation: PC, WinCC; Interface: Ethernet.

Short description of several Projects.

Cooking management system (kitchen), preparation and packaging of chocolate bars.

Full-automated line from the preparation of raw materials to packaging of confectionery products.

Purpose of the line: obtaining final products (chocolate bars) by weight, volume, time, speed dosing and mixing with temperature control, crushing, wrapping in packaging foil, and packing in boxes.

Hardware and software: PLC: Vipa Speed 7 317, Simatic Step7; Workstation: Panel PC, WinCC; Interface: Ethernet, Profibus.

Automation of grain elevators, and kombi-feed preparation.

Automated complex for receiving grain from machines to the elevator and feed preparation. **Purpose of the object**: long-term storage of grain, aeration, moving along the routes between the tanks, feeding to the feed mill and preparing kombi-feeds with food additives for livestock farms.

Hardware and software: PLC: Vipa Speed 7, Simatic Step7; Workstation: PC, WinCC; Interface: Ethernet, Profibus.

Short description of several Projects.



Industrial safety systems of chemical, gas, oil enterprises.

Automatic monitoring and warning systems for industrial accidents with voice alarm. **Purpose of the system**: control of technological parameters (pressure, gas contamination, levels, acidity, vibrations) and formation of message rankings (sound or voice messages) from warning to evacuation, transmission to the fire service, rescue service, emergency, and to responsible government agencies.

Hardware and software: PLC: Vipa Speed 7 300/200/1200 Series, Simatic Step7; Workstation: Simatic Panel PC, PC, WinCC; Interface: Ethernet, Profibus.

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| 2016 :-: Present | 1. Company name: AB-Soft LLC, Odessa |
| | 2. Position within the company: Engineering Project Manager. |
| <u>6</u> 2014 :-: 2016 | Position within the company: Engineering Project Manager. Description of the main activities of the company: Development hardware and software project for US private, and government customers. Description of your responsibilities and to who you reported to: Project management: Managing of two major commercial Web (Yii/Symfony) development Teams and SWAT Team; Scrum-mastering: for three Agile (2 Scrum and 1 Kanban) Teams; . Release management: Support for deployment, Dev/Net/Sys/Security Ops Teams within the major releases, and for SWAT Team within weekly minor patches and updates. Reporting to: Sr. Manager, Sr. Engineering Manager, and pool of Product Managers and C-Level Managers, CTO, CIO, Head of departments from UA and US side. Description of results and photos of your work: Funnel applications for Office, Meetings, Fax and Pro products, and applications to setup phone system for admin and end-users. Please find screenshots/photos by link - https://photos.app.goo.gl/ztbLbLS6mYSPJbnk8 Description of customers: Mostly, there are Product Managers, engineering and marketing specialists from US Telecommunication Company "RingCentral", that provide Products for small business and enterprise clients. Additional Information: Every quarter I make a detour of industrial enterprises for the prevention of automation systems, and implementation of new software and hardware queries/requirements. Description of the main activities of the company: There is vertically integrated agro-industrial holding with the next main focuses: Farming, Sugar production, Milk and cattle, Soybean crushing, Bio-energy. Description of your responsibilities and to whoy our reported to: Implementation internal Industrial Proce |
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| <u> 1995</u> :: <u>1999</u> | Bachelor of Science in Analytical Chemistry and Informatics |
|-----------------------------|--|
| | Poltava V.G. Korolenko NP University. |
| | Graduate work: |
| | Software to visualize the process of titration |
| | of weak acids with strong bases with data storing in the database. |
| | FQ-EHEA 1 cycle / EQF-LLL 7 level |
| | Phase #1 (Semester 1/2) |
| | Inorganic chemistry |
| | Biological chemistry |
| | Analytical chemistry |
| | Architecture of computer systems |
| | Organization and processing of electronic information |
| | Algorithms and data structures Image and multimedia processing |
| | Phase #2 (Semester 3/4) |
| | Methodology for solving problems in chemistry |
| | Structural chemistry |
| | Ecological chemistry |
| | Mathematical Logic and Theory of Algorithms |
| | Information networks |
| | Methods of optimization and operations research |
| | System analysis and decision making theory |
| | Phase #3 (Semester 5/6) |
| | Physico-chemical methods of research |
| | Chemistry of elements |
| | Information technology in chemistry |
| | Physical and colloidal chemistry |
| | Chemical technology Designing software systems |
| | Designing software systems Databases and Information Systems |
| | Fundamentals of the theory of linguistic communication |
| | Theory of management |
| | Information protection |
| | Parallel and distributed computing |
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| | Phase #4 (Semester 7/8) Inorganic and organic synthesis Mechanisms of reactions in chemistry Photocolorimetric methods of analysis Quantum chemistry Chemical methods of analysis and purification of substances Platforms of corporate information systems Pattern recognition Basics of cryptology Distributed information and analytical systems Management of software development |
|----------------------------|--|
| <u>Planned for</u> 2019 | <u>PLC OOP - Master Program Infrastructure Design</u> Udemy, Inc |
| <u>2019</u> :: <u>2019</u> | <u>Project Management - Hard Skills</u> IAMPM, Odessa |
| <u>2018</u> :: <u>2018</u> | <u>Cource Java Automation Engineer - Java AQA</u> CS Hillel, Odessa |
| <u>2017</u> :: <u>2017</u> | Introduction to Computer Science - CS50 MIT / Harvard University, edX |
| <u>2016</u> :: <u>2016</u> | Intensive course QC/QA engineer QA Academy Logos, Lviv |
| <u>2016</u> :: <u>2016</u> | System Architecture based on Siemens Simatic Step7/TIAPortal Educational centre - Siemens, Lviv |
| <u>2015</u> :: <u>2015</u> | Agile methodologies. Real Scrum & issues Training centre - PM School, Kharkiv |
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