
Field Project Atelier 2023

Instructors

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ing. Mauro Prevostini

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Introduction

Introduction

This Booklet describes the list of field project positions available at the companies participating to the Field Project Atelier (SA5) during Fall semester 2023. The Field Project Atelier consists of an experience in collaboration with a company. The goal is for the students to obtain hands-on experience with real world problems. The Field Project Atelier can be done individually or as a group, depending on the given context.

Since 2014 the Faculty of Informatics collaborated in this context with 43 companies offering field projects to 183 students. This year we have 15 companies on board, offering a total of 30 positions.

FPA 2023 Schedule

The Field Project Atelier 2023 will take place **from September 21 to December 15, 2023**, at the company on Thursdays and Fridays.

Important dates are as follows:

- **September 21: Kick-off meeting** at USI
- **September 22: Beginning** of the field project at the company
- **October 18: Update meeting students-instructors** at USI
- **November 22: Update meeting students-instructors** at USI
- **December 15: Closing session** at USI

All meeting mentioned above are mandatory in order to obtain the 9 ECTS.

Students' Duties

You are given time until **May 3rd** to express your preferences ranked as 1, 2, 3, 4 by means of the following form (first-in first-served):

<https://forms.gle/Srx5phNRK7LG9GGj7>

Should a student not do so, he/she will be assigned a project.

List of Field Projects

4bases

	
Website	https://4bases.ch/
Contact	Valentina Favalli, valentina.favalli@4bases.it
Number of positions available	2
Company address	c/o Tecnopolo Ticino Via Cantonale 18, 6928 Manno
Mode of work (in presence, remotely, hybrid)	Hybrid (50% in presence and 50% remote)
Languages requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

4bases SA was founded in 2013, with the mission to design, develop, optimize and validate end-to-end diagnostic solutions based on Next Generation Sequencing. The company is ISO 13485 certified for the production of genetic test kits, which are sold in 70 countries at hospitals up to public or private laboratories and research centers. The expertise of 4bases was born in oncology, and has extended to rare diseases, focusing on precision medicine solutions.

Project Title

Creation of a genetic mutation report and integration into the 4eVAR platform.

Project Description

In the field of next-generation sequencing, it becomes crucial to analyze the data obtained from the sequencer appropriately with regards to the type of sample and the clinical question, as well as taking into consideration the type of chemical preparation performed and the sequencing platform.

4bases decided for this reason to develop a proprietary platform, 4eVAR, to provide the complete validation of the process, which was optimized by taking into consideration all the variables listed. Starting from the raw data (FASTQ), the platform calculates VCF files with the list of genetic variants.

The correct and complete identification of the genetic mutations that are present in the sample however, even though it is crucial, remains only the first step in the difficult process of

interpreting the clinical significance. The main focus of the process is the creation of a report for the geneticist in order to assess the patient's genetic profile not only through a mere list of mutations, but also through guidelines, standardized nomenclature, and parameters taken from international reference databases that ultimately allow a classification of each of them into classes of pathogenicity.

To this information, the quality and reliability of the data must also be added and represented, and the systems must be put in place to ensure its full reproducibility and traceability.

The balance between clear presentation, completeness of the information extracted from the analysis, and by comparison with other sources via API, the creation of an internal database, and the development of a protocol for maintenance and validation will be the subject of the project, and will set the stage for the development of the so called tertiary interpretation interface of the 4eVAR platform.

The project will then develop in 2 parts:

- 1) Creation of an 'interface to convoy the data obtained for each mutation via questioning of knowledge management systems via API, and creation of query and filtering systems.
- 2) Integration of the data into an internal database, and development of an automatic system for maintaining and recall of mutations for whom the classification changes, leading to an alert system for the clinician.

At the end of the project, the tool created in the above manner, after appropriate debugging and validation, will be integrated into the 4eVAR platform, and made available for testing in beta version for selected clients.

Technologies to be used

Raw data from state-of-the-art sequencers, Docker environments, Python, R, and integration with APIs in these languages.

During the company experience, a visit to the R&D and production laboratories located in Pavia, Italy, will also be proposed to better understand the project context.

4BMC Sagl

	
Website	https://4bmc.ch
Contact	Saverio Salaris, saverio@4bmc.ch
Number of positions available	Project 1) → 1 position Project 2) → 1 position
Company address	Via Luganetto 4, 6962 Viganello
Mode of work (in presence, remotely, hybrid)	In presence
Languages requested	English
Previous Field Project Atelier SA5 participation	2022

Company Description

4BMC è una Solutions Agency che ha come vocazione quella di aiutare le PMI a valorizzare la loro offerta tramite l'uso delle tecnologie più avanzate, in particolare la tecnologia Blockchain: in quest'ottica, si occupa di sviluppo di soluzioni per tracciabilità alimentare, certificazione e protezione della proprietà intellettuale. 4BMC offre inoltre assistenza nella raccolta fondi, realizzazione e lancio di soluzioni blockchain, come smart contract, D-App, NFT, criptovalute e portafogli virtuali.

PROJECT 1:

Project Title

Blockchain Traceability for Agri-food SMEs (Producer Dashboard)

Project Description

The objective of this project is to create a Producer Dashboard for a blockchain traceability system in the agri-food sector. Using Vue.js and Django, the dashboard enables producers to efficiently register supply chain events on the blockchain.

The Producer Dashboard includes:

- Product Page Creation: Producers can add photos, descriptions, and organoleptic characteristics.
- Product Page Editing: Producers can modify supply chain steps, photos, and descriptions.

- Accounts and Roles Management: Producers can assign different permissions and access levels.
- Tracking Monitor Tool: Producers can view real-time tracking status and resolve issues.

The computer science student will collaborate with the internal development team on tasks like database models, UI/UX design, backend logic, and frontend UI implementation. This project offers students the opportunity to work on a practical solution, develop frontend and backend skills, and gain experience in UI/UX design and blockchain integration.

Technologies to be used

Python, Django, Vue.js, HTML, CSS, Javascript, Rest API, postgres, Blockchain

PROJECT 2:

Project Title

QR Code Management system

Project Description

The objective of this project is to develop an enterprise-level QR Code Management System. The system will be developed using Vue.js for the frontend and Django for the backend, allowing users to efficiently manage a large number of QR codes while also providing additional security features such as digital signatures and steganography.

The QR Code Management System includes:

- QR Code List: Users can view, sort, and filter basic information about all created QR codes.
- QR Code Details: Users can access detailed information about a specific QR code from the list view.
- QR Code Creation: Users can create new QR codes, specifying the content and optional settings.

The computer science student will collaborate with the internal development team on tasks such as database models, UI/UX design, backend logic, and frontend UI implementation. This project offers students the opportunity to work on a practical solution, develop frontend and backend skills, and gain experience in UI/UX design and digital signatures integration.

Technologies to be used

Python, Django, Vue.js, HTML, CSS, Javascript, Rest API, postgres

AnswerConsulting SA

	
Website	https://www.answerconsulting.ch/
Contact	Jacopo Malnati, j.malnati@answerconsulting.ch
Number of positions available	2
Company address	Via Penate 4, 6850, Mendrisio
Mode of work (in presence, remotely, hybrid)	Hybrid (50% in presence and 50% remote)
Languages requested	Italian or English (they have Spanish speakers, too)
Previous Field Project Atelier SA5 participation	None

Company Description

We help organizations reinvent Enterprise Content Management (ECM) through agile technology, world-class technical expertise, and strategic vision (and to you it means nothing, I get it. We are a cool, young team of hardcode coders, motorbikers, and amateur astronomers having fun in the office).

Project Title

Big Data visualization

Project Description

We work with documents, metadata, fields, attributes. These entities are subject to events triggered by users or systems. Our customers might have hundreds of millions of documents and billions of events and metadata. We want to visually depict a subset of these as a mean of navigation and visual representation to highlight patterns or bad smells. It will be a R&D project.

Technologies to be used

Groovy, Javascript, SLQ, JavaScript visualization frameworks and libraries (such as 3D.js)

Banana.ch SA

	
Website	https://www.banana.ch
Contact	José Del Romano, jose@banana.ch
Number of positions available	Project 1) → 1 position Project 2) → 2 positions; it can be done by one or two students.
Company address	Via la Santa 7, 6962 Viganello
Mode of work (in presence, remotely, hybrid)	Hybrid (50% in presence and 50% remote)
Languages requested	English
Previous Field Project Atelier SA5 participation	2019, 2020, 2021, 2022

Company Description

Banana.ch SA was founded in Lugano in 1990. The business is focused on the production and sale of Banana Accounting+, a financial accounting software for enterprising people, small businesses, association managers and individuals. Banana is a spreadsheet-inspired accounting software, has sold more than 300000 licenses worldwide and is a leader in Switzerland. In 2002 was the first accounting software in the world to introduce blockchain technology to ensure the legal validity of accounting data.

PROJECT 1:

Project Title

Create a print library for webassembly

Project Description

Banana includes a CSS-based reporting system. We would like to extract this CSS reporting functionality and put it into a dll library so that it is also available for webassembly.

Technologies to be used

C++, Qt, Webassembly

PROJECT 2:

Project Title

App integrated in sharePoint and Teams.h sharePoint and Teams integration

Project Description

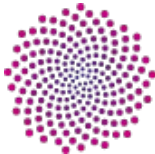
Create an application to edit text files directly in Teams and sharepoint:

- Set up an on-premises SharePoint server
- Analyze use cases
- Create a small App that can do the following:
 - Save/Read files in a user's personal space.
 - Save/Read files in shared space
 - Read files from personal space contained in a shared space (administrator)

Technologies to be used

Sharepoint, C++, Qt

Brightside Capital

 BRIGHTSIDE CAPITAL	
Website	https://brightside-capital.com/
Contact	Davide Scannapieco, davide.scannapieco@brightside-capital.com
Number of positions available	3
Company address	Via Balestra 11, 6900 Lugano
Mode of work (in presence, remotely, hybrid)	In presence
Languages requested	English
Previous Field Project Atelier SA5 participation	2020, 2021, 2022

Company Description

Family Office - A financial advisor for Ultra High Net Worth Individuals or Families. We manage the interests of 22 Italian families through investment decision and spot-on reporting. We have a mixed imprint between the American world (young motivated team, competitive environment, meritocracy and team before the individual) and Latin culture, promoting, within that framework, your own creativity.

Project Title

Fintech Hub - Integration of first class finance software and automating the delivery of data

Project Description

We are the leadership team of a Multi Family Office based in Lugano, Switzerland. During the first 5 years in business, we saw the biggest increase in masses in the Consolidation Services which, via a vis the Wealth Management portion of the business, generates less revenue per Asset Under Management, requires a bigger maintenance but has bigger potential for revenue growth. The potential fast growth of the Consolidation Services, being a lower margin business and requiring skilled personnel to provide a high touch service to our clients (required when working with Ultra High Net Worth Individuals), has been identified as the bottleneck for the sustainability of our growth in the scalability of the business.

To solve the problem, we built an MVP of a hub aimed to connect the wealth management custodial data into external software needed to deliver our Services, all while monitoring the data at all time to ensure top quality and applying checks otherwise done manually.

We developed the platform with an architecture that enables us to resell it so, while using the MVP version to ease Brightside daily operation, we are looking to enhance the platform to

become a sellable version SaaS version of our back hand software. 2021 will be dedicated to the transformation of the MVP into a marketable product. As per your role in the project, below a few ideas:

- Improve the functionalities of the central hub, responsible of managing all integrated data, by continuously monitoring the data within itself.
- Develop a new data integration in input, by taking standard files (CSV, Excel etc..) to be manipulated accordingly and to be integrated inside the Hub.
- Improve the integration workflow with already connected software, through APIs or secure file delivery.
- Develop ex-novo new processes to be added to the umbrella of services we provide.
- Improve data management by interconnect more different data source than we currently do.
- If you are willing to go the extra mile, you could collaborate to some more complex project, that can eventually lead to a Thesis Abstract. In this regard, we currently have one USI Master Student researching a new innovative functionality for our software.

You will join a team of a senior software architect, and 3 other developers. Most the team is ex-USI and everybody is less than 27 years old.

Technologies to be used

Python, Django, Pandas, AWS, SFTP, API, Asynchronous/Synchronous Programming, Web Developing, Vue

Claranet Switzerland GmbH

	
Website	https://www.claranet.ch/
Contact	Celestino Bellone, celestino.bellone@claranet.com
Number of positions available	Project 1) → 1 position Project 2) → 2 positions
Company address	Via Luganetto 4, 6962 Lugano
Mode of work (in presence, remotely, hybrid)	In presence
Languages requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

Claranet combines pioneering technologies, practices, and expertise to propel our customers' ambitions. Through a vibrant customer centric culture of collaboration, learning, and opportunity, we nurture a dynamic community of the best technology and service expertise spanning cloud, cybersecurity, networks, and unified communications. With over 3,000 employees, we are based in offices across Europe, the United States and Brazil.

PROJECT 1:

Project Title

Scheduled PDF Cost Reports

Project Description

Scheduled PDF Cost Reports is a serverless application that helps to keep costs under control through a simple interface which combines the functionality of AWS Cost Explorer, AWS Cost & Usage Reports and AWS Budgets.

More info on the AWS Marketplace: <https://aws.amazon.com/marketplace/pp/prodview-4vfsocsu4n7pg>

We are continuously adding new features to make PDF Cost Reports a leading solution for FinOps.

Your job will be to analyze the integration of additional AWS financial tools as data sources for PDF Cost Reports and then design, implement, and test the new feature.

Key Technologies:

- AWS Lambda
- Java/GraalVM, Quarkus, Node.js, Python
- IAC: AWS CloudFormation
- React, CSS
- git

Technologies to be used

AWS Lambda, Java/GraalVM, Quarkus, Node.js, Python, AWS CloudFormation, React

PROJECT 2:

Project Title

Cloud Native assessment tool

Project Description

"Cloud Native assessment tool" is an internal product of Claranet Group whose main goal is to assess competence in the Cloud Native development for the following groups:

- Hiring candidates
- Internal developers / cloud engineers
- Customers' developers / cloud engineers

It does so by assigning to the candidate a series of time-constrained challenges, which can be of different difficulty, and give a rating at the end of each challenge, even if the challenge was not completed.

Your job will be to define and implement new challenges which will be added to the existing ones.

Key Technologies:

- IAC: Terraform
- Python
- React, CSS
- git

Technologies to be used

Hashicorp Terraform, Python, React

CodeLounge

	
Website	https://codelounge.si.usi.ch/
Contact	Project 1) Roberto Minelli, roberto.minelli@usi.ch Project 2) Michele Lanza, michele.lanza@usi.ch
Number of positions available	Project 1) → 2 positions Project 2) → 1 position
Company address	USI, Campus Est
Mode of work (in presence, remotely, hybrid)	Project 1) In presence Project 2) Hybrid (50% in presence, 50% remote)
Languages requested	Project 1) Italian Project 2) English and Italian. German, Swiss German can be a plus
Previous Field Project Atelier SA5 participation	2017, 2018, 2019, 2020, 2021

Company Description

CodeLounge è il centro di ricerca e sviluppo del Software Institute - USI, Lugano. CodeLounge riunisce competenze provenienti dal mondo accademico e industriale, con due obiettivi principali: spingere le idee oltre i prototipi, realizzando prodotti reali, e svolgere ricerca applicata nelle aree dello sviluppo del software, della visualizzazione, dell'evoluzione e dell'analisi. Essendo parte del Software Institute, collabora con i gruppi di ricerca e promuove progetti interdisciplinari.

PROJECT 1:

Project Title

Field Project Atelier Manager

Project Description

Dal 2014 la Facoltà di Scienze informatiche dell'USI coltiva rapporti con aziende del territorio per offrire la possibilità agli studenti del 3° anno di Bachelor di fare un'esperienza lavorativa durante il loro percorso di studi nel contesto del Field Project Atelier (Software Atelier 5). Il Field Project Atelier ha una durata di 12 settimane, da metà settembre a metà dicembre, per un totale di circa 200 ore e può essere svolto individualmente o in gruppo, a seconda del contesto.

A oggi, le aziende interessate a offrire un Field Project agli studenti devono compilare un formulario per ogni progetto che desiderano proporre entro il 31 marzo. Nel corso del mese di aprile studenti idonei ad affrontare un Field Project ricevono un opuscolo con tutte le proposte e vengono invitati a esprimere le loro preferenze. Successivamente, i responsabili di Software

Atelier 5 effettuano le assegnazioni e gli studenti ricevono l'esito delle assegnazioni entro la fine di maggio.

L'obiettivo di questo progetto è quello di sviluppare un portale dedicato a Software Atelier 5 per automatizzare, parzialmente, questo processo. Le aziende utilizzeranno il portale per proporre i loro progetti. Una volta passata la deadline (valore che deve essere inserito dai responsabili di Software Atelier 5) se il totale delle posizioni offerte sarà maggiore o uguale al numero di studenti che parteciperanno a SA5 (altro valore che devono inserire i responsabili di Software Atelier 5) il portale impedirà alle aziende di inserire nuovi progetti. Qualora dopo la deadline il numero di posizioni offerte non fosse sufficiente, si potrebbe, ad esempio, estendere automaticamente la deadline di 15 giorni. Una volta completato l'inserimento dei progetti, il portale genererà automaticamente un PDF da utilizzare come booklet con la lista dei progetti proposti. In seguito, gli studenti utilizzeranno il portale per esprimere le loro preferenze sui progetti. Infine, i responsabili di Software Atelier 5 utilizzeranno il portale per effettuare le assegnazioni dei progetti e il portale comunicherà agli studenti l'esito delle assegnazioni.

Technologies to be used

Il progetto consiste nella realizzazione di un'applicazione web sviluppata utilizzando Spring Boot e Kotlin. Spring Boot è una moderna libreria che semplifica lo sviluppo di applicazioni HTML lato server e API REST. Kotlin è un linguaggio di programmazione di alto livello, simile a Java.

Gli studenti saranno seguiti da Roberto Minelli (Software Institute e CodeLounge), Davide Paolo Tua (CodeLounge), Mauro Prevostini e Michele Lanza (CodeLounge e responsabili di SA5).

PROJECT 2:

Project Title

Digitalization of the MNA Architecture Studio

Project Description

MNA is an architecture company located in Zurich. MNA has been active for more than a decade, with many innovative projects and activities. Like any company led by non-computer scientists, MNA has grown organically over the years, and in terms of its IT infrastructure it always tried to do the minimum necessary to stay afloat, since IT is not their core business.

The project revolves around performing a deep analysis of the MNA business domain, and lead the company towards the creation of a "digital twin", where any real-world document, activity, and process is reflected on a stable and evolvable IT infrastructure.

The project is very eclectic, and requires an open mind and considerable problem solving skills. The project is mostly hybrid, but several trips to Zurich (fully covered by MNA, also including stays overnight) will be required.

The project will be supervised on the USI side by Prof. Michele Lanza and take place within the wider frame of CodeLounge.

Technologies to be used

To be defined together

Delvitech



Website	https://delvi.tech/
Contact	Patrick Rota, patrick.rota@delvi.tech
Number of positions available	1
Office address	Via Pizzuolo 77, 6862 Rancate
Mode of work (in presence, remotely, hybrid)	In presence
Languages requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

Delvitech designs, manufactures and supplies 3D automated optical inspection systems for Printed Circuit Board Assembly (PCBA) in both SMT and THT processes. R&D and innovation are at the heart of everything we do.

Project Title

Implementation of a software testing system

Project Description

Design and development of a multi-language test suite for PCB inspection software. The current machine inspection software is comprised of several microservices written mainly in Java, Python and C++.

The project goal is to plan and implement a unit and integration test framework has to be implemented in any of the chosen language (according to student preference).

Student applying for this project will have the great opportunity to see a professional software from inside and explore the inner working of a complex and multifaceted software.

Technologies to be used

Java, Python, C++, and respective unit testing libraries

Duferco

	
Website	https://www.duferco.com/
Contact	Fabio Iannello, Fabio.iannello@duferco.com
Number of positions available	2
Company address	Via Trevano 2A, 6900 Lugano
Mode of work (in presence, remotely, hybrid)	Hybrid (50% in presence and 50% remote)
Languages requested	English
Previous Field Project Atelier SA5 participation	2021, 2022

Company Description

Duferco is an international company active in several areas, including: energy, steel, shipping and innovation. The field project will be developed together with the corporate innovation team, whose objective is to bring digital technologies, including advanced analytics, machine learning and AI, in everyday operations within Duferco.

Project Title

End-to-end platform for the collection, processing and visualization of real-time IoT data in industrial environment

Project Description

The project consists of two main steps: 1) create real-time data pipelines for the collection and processing of industrial sensors data; 2) create a simple web app for data visualization and interaction. The end-to-end solution will be capable of:

- Ingest data from multiple data sources (e.g., SQL, text files, MQTT/OPC UA streams, images)
- Data processing (ETL)
- Application of Algorithms to extract insights from the data
- Development of a simple but effective web app that enables users to visualize and interact with data.

This project will leverage an already existing cloud-based data platform that duferco has been developing in recent years by introducing new functionalities. The developed solution is a proof of concept (POC) that aims to demonstrate the capability of the proposed solutions and that can be the base for further development.

Technologies to be used

Common technologies/languages include: python (e.g., Pandas, Numpy, Dash), SQL, cloud services (AWS), MQTT, OPC UA, containers

EOC - Ente Ospedaliero Cantonale, Area ICT

	
Website	https://www.eoc.ch/
Contact	Andrea Brites Marto, andrea.britesmarto@eoc.ch
Number of positions available	Project 1) → 2 positions Project 2) → 1 position
Office address	Via Lugano 4B, 6500 Bellinzona
Mode of work (in presence, remotely, hybrid)	In presence
Languages requested	English
Previous Field Project Atelier SA5 participation	2019, 2020, 2021

Company Description

The EOC is the multisite hospital in Ticino where it has a presence with its institutions throughout the entire canton with a total of 1,000 beds. Thanks to the commitment and expertise of its more than 5,000 employees and their focus on human relations, the EOC ensures quality health care for 380,000 patients a year.

PROJECT 1:

Project Title

Patients Contact Tracing

Project Description

Everyday, in the hospitals, we have thousands of patients and employees around and as a consequence these people are in contact everytime. In case of infection, we need to be able to know in a very short time who has been in contact with whom.

The aim of this project is to develop a tool allowing the discovery of potential contacts between employees and patients such that in case of a contagious infection.

The project is two-sided, the first part is to make a study on which data are available and how to aggregate them, while the second part is more focused on the development of a tool to visualize the gathered information. The main idea for the tool is to start from a starting and an ending date and get all the patients or employees who have been in contact in the same room between the dates. Furthermore, the tool is extendible with some more features such as a filters on the hospitals structures or hospitals wards.

Technologies to be used

React (Typescript), Node.js (Javascript), SpringBoot(Java), ElasticSearch, Databases(MongoDB , MariaDB, OracleDB)

PROJECT 2:

Project Title

Modulo "R" Documents Confidentiality

Project Description

The "Modulo R" is a software which manages all kind of patient documents redacted by doctors through other softwares. To improve its usability we need to integrate a new component which will manage the confidentiality of documents and will show documents based on who is viewing them. There are many aspects to take into account, who decide the visibility of documents, how to structure it (by hospital wards, by hospital zones,...), and, last but not least automate the process by suggesting the visibility based on the user who is uploading the document. Furthermore, the students will be asked to study and design the system. The final aim of this project is then to develop and integrate the new component into the already existing architecture of "Modulo R".

Technologies to be used

React (Typescript), Node.js (Javascript), , SpringBoot(Java), SQL

Ex Machina Sagl

	
Website	https://exmachina.ch/
Contact	Sebastiano Cobianco, sebastiano.cobianco@exmachina.ch
Number of positions available	1
Company address	Quartiere Maghetti 20, 6900 Lugano
Mode of work (in presence, remotely, hybrid)	In presence
Languages requested	English and Italian
Previous Field Project Atelier SA5 participation	2014, 2016, 2017, 2018, 2019, 2020, 2021

Company Description

Centro di competenza per le tecnologie open source, cloud computing, blockchain. Dal 2005 serviamo aziende multinazionali e pubbliche amministrazioni in Svizzera e all'estero.

Project Title

CitiZen

Project Description

Sviluppo di una applicazione mobile-first per la cittadinanza attiva che riduca la distanza tra il cittadino e le istituzioni o le amministrazioni locali. la soluzione deve essere multitenant e riutilizzabile in contesti piu specifici. L'utente deve potere gestire contenuti multimediali di varia natura oltre a contenuti testuali e di interazione con l'amministrazione locale. Questa interazione potrebbe anche essere facilitata da strumenti di AI generativa

Technologies to be used

java, swift, kotlin, vue.js, angular

Mondo Software

 Mondo Software CONSULENZA E SERVIZI IT	
Website	https://www.mondosoftware.info/
Contact	Gualtiero Bramati, gbramati@mondosoftware.net
Number of positions available	1
Company address	Via Vincenzo D'Alberti 4, 6830 Chiasso
Mode of work (in presence, remotely, hybrid)	Hybrid (50% in presence and 50% remote)
Languages requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

We are an IT consulting company that follows both projects at clients' premises and customizations of our products.

Project Title

Learning through simulation

Project Description

The purpose of this project is to create an innovative e-learning system that allows students to learn by interacting with the system in a path that is not predetermined, but rather managed according to rules of connection between the current instance of information and the next one.

The system must provide for two roles: a **teacher** who creates the course content and establishes the rules of connection, and a **student** who uses the course interactively.

The information that makes up a course must be organized into "chapters," each chapter can be traditional (text, images, videos) or interactive.

An interactive chapter can be a simple hypertext or a more complex path in which a first topic is proposed to the students and, depending on their response, the system moves to a second topic, choosing it based on the rules set by the teacher. The process repeats interactively until a "final" type of topic is reached. The path created in this way can change each time depending on the student's reactions, allowing them to experiment and simulate the concepts learned. The process should be similar to role-playing games.

The platform includes the management of users divided into the two roles (teacher and student), the creation of a catalog of courses prepared by the teachers who create the content and rules, a system to match students to courses, and a tracking system to record the level of progress of a student in each attended course.

Completion of individual chapters can result in a score that is assigned to the student at the end of the course.

There could also be an option to allow a course to be simultaneously executed by multiple students in a collaborative form, including a tool for dialogue between participants (chat or video).

If the course allows it, a teacher can intervene during its execution (synchronously with respect to the student or students) to make observations or to force the path, overlapping the system rules.

Technologies to be used

Microsoft technologies (.NET) possibly integrated in a rule-based system.

SPH Technology

	
Website	https://www.sphtechnology.ch/
Contact	Angelo Dariol, angelo.dariol@sphtechnology.ch
Number of positions available	1
Company addresses	Via Giuseppe Motta 16, 6830 Chiasso
Mode of work (in presence, remotely, hybrid)	Hybrid (50% in presence and 50% remote)
Languages requested	English and Italian
Previous Field Project Atelier SA5 participation	None

Company Description

Azienda che sviluppa software nell'ambito dell'automazione industriale. Programmiamo PLC Siemens, Bosch, Rockwell, Abb, Beckhoff, Omron... specializzati in motion per la gestione robot customer.

Project Title

Smart Remote Solution

Project Description

Service post-vendita, per risolvere i problemi in modo veloce ed efficace.

Per ogni macchina viene creata una sua biblioteca, all'interno della quale vengono inseriti tutti i manuali (dal manuale della macchina allo schema elettrico, pneumatico e tutti i manuali dei singoli dispositivi installati sulla macchina).

Il manutentore in difficoltà, per es. di fronte ad un allarme o al malfunzionamento della macchina, per capire un determinato parametro, per sostituire un pezzo meccanico, un riduttore, fare un cambio formato eccetera, digitando in modo anche impreciso quello che vuole fare, il sistema basato sulla A.I. ricercherà all'interno della "biblioteca" in modo veloce ed intelligente le informazioni richieste, visualizzando il documento, disegni, eventuali video, in modo mirato. Trovato quanto richiesto, con uno scambio di messaggi, darà le soluzioni più appropriate per risolvere quanto richiesto.

Nel caso in cui il sistema automatico non riuscisse a risolvere il problema, verrà inviato un ticket al Service in presenza, che si troverà uno storico di cosa ha fatto il manutentore e cosa gli ha proposto il sistema automatico per risolvere un determinato problema. A questo punto, il Service e il manutentore on site potranno dialogare ad es. come su Skype, Teams eccetera, scambiandosi video, foto tramite smartglasses oppure semplicemente con dei dispositivi smart, il Service potrà vedere quello che gli mostra il manutentore e guidarlo a risolvere definitivamente il problema da remoto.

Technologies to be used

PHP, Laravel, C++, Android Studio

Si richiede capacità d'iniziativa e voglia di imparare

The Reputation Exchange PLC (REPX)

	
Website	https://therepx.com/
Contact	Alfredo Villa, avlugano@gmail.com
Number of positions available	2
Company address	Lugano (address to be defined)
Mode of work (in presence, remotely, hybrid)	In presence
Languages requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

REPX is a Public Company with legal headquarters in London and operations in Italy and Ticino. REPX is a fintech that revolutionizes traditional banking by combining technology and the passion of hundreds of millions of fans worldwide with social media. REPX allows sports teams, celebrities, influencers, brands, and iconic cities to connect with fans in an innovative way through exclusive co-branded prepaid cards, debit cards, and digital products.

www.therepx.com.

Project Title

Sector-specific applications for fashion and charity industries that make use of a payment app linked to a prepaid card.

Project Description

The student will actively collaborate in modifying, transforming, and adapting the existing base payment app, adding specific innovations and features to create an innovative payment app to be launched in the fashion and charity sectors. These innovations and features are based on proprietary patents and radically change the payment flow, control, and accounting, providing users with a specific dashboard that enables intelligent data management.

Additionally, they will add social content to promote the creation of a community among users. In the Fashion sector, the App and the payment chip will also have a certification value for the product, while in the Charity sector, our App will greatly reduce the administrative costs of donations and the control of their real usage.

Technologies to be used

The main part of the App is programmed in FLUTTER while the native modules are in Android and iOS languages. The backend is entirely in Dot.net.

Welld Sagl

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Website	https://www.welld.ch/
Contact	Luca Camerini, luca.camerini@welld.ch
Number of positions available	1
Company address	Via Campagna 13, 6982 Agno
Mode of work (in presence, remotely, hybrid)	In presence
Languages requested	English
Previous Field Project Atelier SA5 participation	2019

Company Description

We are a software house with almost 15 years of successful activity in Ticino and abroad. Our mission is to bring quality in software development, embracing continuous improvement practices and treating our customers' products as our own. We believe in continuous learning and in professional community building, and boost many training and knowledge-sharing activities. Our work spans from web to mobile apps, in domains like finance, healthcare, energy, industry automation and more.

Project Title

Empirico goes mobile

Project Description

Empirico is a newborn internal fintech product developed by Welld to make systematic investment strategies easy for its users. The application has a complex algorithmic engine working with multi-year historical market data and providing users with powerful backtesting functionalities. The tool also allows to turn strategies into active investments, providing users with market order lists and trading signals for portfolio's rebalancing. The aim of the project is to take part in the development of the mobile version of Empirico, which is currently a web app. You will work closely with software engineers and UI/UX designers and contribute to make the end user experience seamless and effective.

Technologies to be used

React, React Native, Kotlin

We believe that every teammate can make an impact, and while at Welld you will be one of us. So we expect you to be committed towards the project and eager to learn and produce something of value.

Field Project Atelier Contract Template

Via Buffi 13
6900 Lugano
Switzerland

from	Mauro Prevostini
tel	+ 41 58 666 4717
fax	+ 41 58 666 4536
e-mail	mauro.prevostini@usi.ch
web	www.inf.usi.ch
date	GG.MM.2023

Contratto Field Project

Titolo Progetto: **xxxxx**

L'Università della Svizzera italiana
Via Lambertenghi 10A - 6900 Lugano
rappresentata dalla Rettrice, Prof. Luisa Lambertini, e dal Segretario Generale, Dr. Giovanni Zavaritt,
(in seguito USI)

L'azienda **nome dell'azienda**
indirizzo
rappresentata da **nome e cognome**
(in seguito Azienda)

Lo/La studente/ssa **nome e cognome**
indirizzo
(in seguito Studente/essa)

stipulano il seguente contratto nell'ambito del corso Field Project del programma di Bachelor in Scienze informatiche.

Art. 1 Assegnazione field project	1. Lo/La Studente/essa partecipa al Programma di Bachelor della Facoltà di scienze informatiche che prevede lo svolgimento di un field project in collaborazione con un'azienda, nel corso del quinto semestre (18 settembre – 22 dicembre 2023). 2. L'Azienda mette a disposizione un progetto nell'ambito del field project che verrà svolto dal/dalla Studente/essa. 3. Il progetto è formalmente presentato dall'Azienda allo/alla Studente/essa durante il kick-off meeting all'inizio del semestre.
Art. 2 Svolgimento del field project	1. Il field project si svolge tutti i giovedì e venerdì durante il quinto semestre del programma di Bachelor in scienze informatiche per la durata massima di 14 settimane. Inizia con il Kick-off Meeting (il 21.09.2023) e termina con la presentazione finale da parte dello/della Studente/essa (il 15.12.2023). 2. Lo svolgimento del field project equivale a 9 crediti ECTS corrispondenti ad un impegno di, al massimo, 210 ore. Vale a dire un impegno medio di circa 15 ore settimanali.
Art. 3 Divulgazione di informazioni aziendali	1. L'Azienda mette a disposizione dello/della Studente/essa tutte le informazioni e i documenti necessari per realizzare il progetto in modo soddisfacente. 2. Lo/La Studente/essa non è autorizzato/a a divulgare informazioni aziendali ad eccezione dei temi sviluppati nell'ambito del progetto.
Art. 4 Supervisione del progetto	1. L'Azienda si impegna a mettere a disposizione Nome Cognome, membro del suo staff, come supervisore delle attività di progetto che verranno svolte dallo/dalla Studente/essa, così come per la preparazione della presentazione finale. 2. L'USI metterà a disposizione il professore responsabile del "Field Project" con l'obiettivo di seguire, a scadenze regolari, i progressi dello/della Studente/essa durante lo svolgimento del progetto e si assicurerà che le attività adempiano ai requisiti richiesti.
Art. 5 Rapporto finale	1. Lo/La Studente/essa presenta i risultati del suo progetto durante la sessione finale chiamata "Presentazione del rapporto finale".
Art.6 Valutazione	1. La valutazione del field project verrà condotta sia dall'Azienda che dal professore responsabile.

Art. 7
Rimborsi spese

1. Le spese sostenute dallo/dalla Studente/essa nella realizzazione del progetto sono coperte dall'Azienda. In particolare, il rimborso di spese di viaggio e alloggio, incontri e gruppi di lavoro, copie, libri, produzione di report, ecc.
2. Il metodo di rimborso sarà organizzato caso per caso tra lo/la Studente/essa e l'Azienda.

Art. 8
Compensazioni

1. Per la realizzazione del progetto, nessuna compensazione è dovuta dall'Azienda né allo/alla Studente/essa né all'USI.
2. Qualsiasi forma di compensazione che può essere accettata al di fuori di questo contratto tra l'Azienda e lo/la Studente/essa deve essere comunicata all'USI.
3. Se un compenso extra-contrattuale dovesse essere la fonte di disaccordo tra le parti firmatarie del presente contratto o dovesse compromettere il positivo completamento del progetto, l'USI sarà libera di intervenire come arbitro al fine di trovare un accordo accettabile da tutte le parti.

Art. 9
Diritti di proprietà intellettuale

1. La proprietà intellettuale appartiene all'Azienda che detiene tutti i diritti patrimoniali su quanto verrà prodotto dallo/dalla Studente/essa per la durata del field project.
2. I diritti d'autore del prodotto appartengono sia allo/alla Studente/essa sia all'Azienda.

Art. 10
Confidenzialità

1. Per "Informazioni riservate" si intende qualsiasi informazione scientifica, finanziaria, commerciale, operativa o di altro tipo tecnico, scambiata in qualsiasi forma e il cui accesso è dato dalla parte rivelante per la parte ricevente.
2. Lo/La Studente/essa e l'USI devono mantenere la confidenzialità per quanto riguarda le informazioni riservate dell'Azienda e impegnarsi a non utilizzare per scopi diversi i soggetti del progetto. Essi non sono autorizzati a diffondere o copiare queste informazioni senza l'esplicita autorizzazione scritta dell'Azienda. Se così richiesto dall'Azienda, lo/la Studente/essa deve restituire tutti i documenti messi a disposizione dell'Azienda stessa.
3. Tutte le informazioni riservate messe a disposizione dello/della Studente/essa dall'Azienda possono essere rivelate solamente nell'ambito del progetto.
4. L'obbligo di riservatezza delle informazioni comunicate dall'Azienda ha una durata di cinque anni. Lo/La Studente/essa e l'USI si impegnano a informare le altre persone coinvolte direttamente o indirettamente con il progetto che la clausola di riservatezza ha una prescrizione di cinque anni.

Art. 11
Validità e durata

1. Questo contratto è valido dal momento della firma delle parti.
2. Se non diversamente indicato, questo contratto è in vigore fino alla fine del Field Project. Esso può essere annullato da entrambe le parti, con due settimane di preavviso.
3. In casi gravi, in particolare le gravi violazioni di dovere, danno diritto alla parte danneggiata di annullare il contratto senza essere ritenuta responsabile per le spese prodotte dall'annullamento.
4. In caso di annullamento, tutti i documenti messi a disposizione dello/della Studente/essa dall'Azienda saranno restituiti.

Art. 12
Applicabilità della legge, conflitti e autorità giuridica

1. Il presente contratto è regolato dalla legge svizzera.
2. Le parti si adoperano per risolvere qualsiasi controversia relativa all'interpretazione o esecuzione del presente contratto amichevolmente. Nel caso in cui non si raggiunga un accordo, le parti riconoscono la competenza esclusiva del Tribunale della Città di Lugano.

Art. 13
Modifiche del contratto

1. Qualsiasi modifica o aggiunta al presente contratto devono avvenire per iscritto e richiedono firme giuridicamente vincolanti delle parti per essere valide.

Art. 14
Stesura

1. Questo contratto viene redatto in 3 copie. Ogni firmatario riceve una copia debitamente firmata.

Luogo e data

Luogo e data

Luogo e data

Azienda
rappresentante

Studente/essa

USI – Facoltà di scienze informatiche
Michele Lanza,
responsabile Field Project

Luogo e data

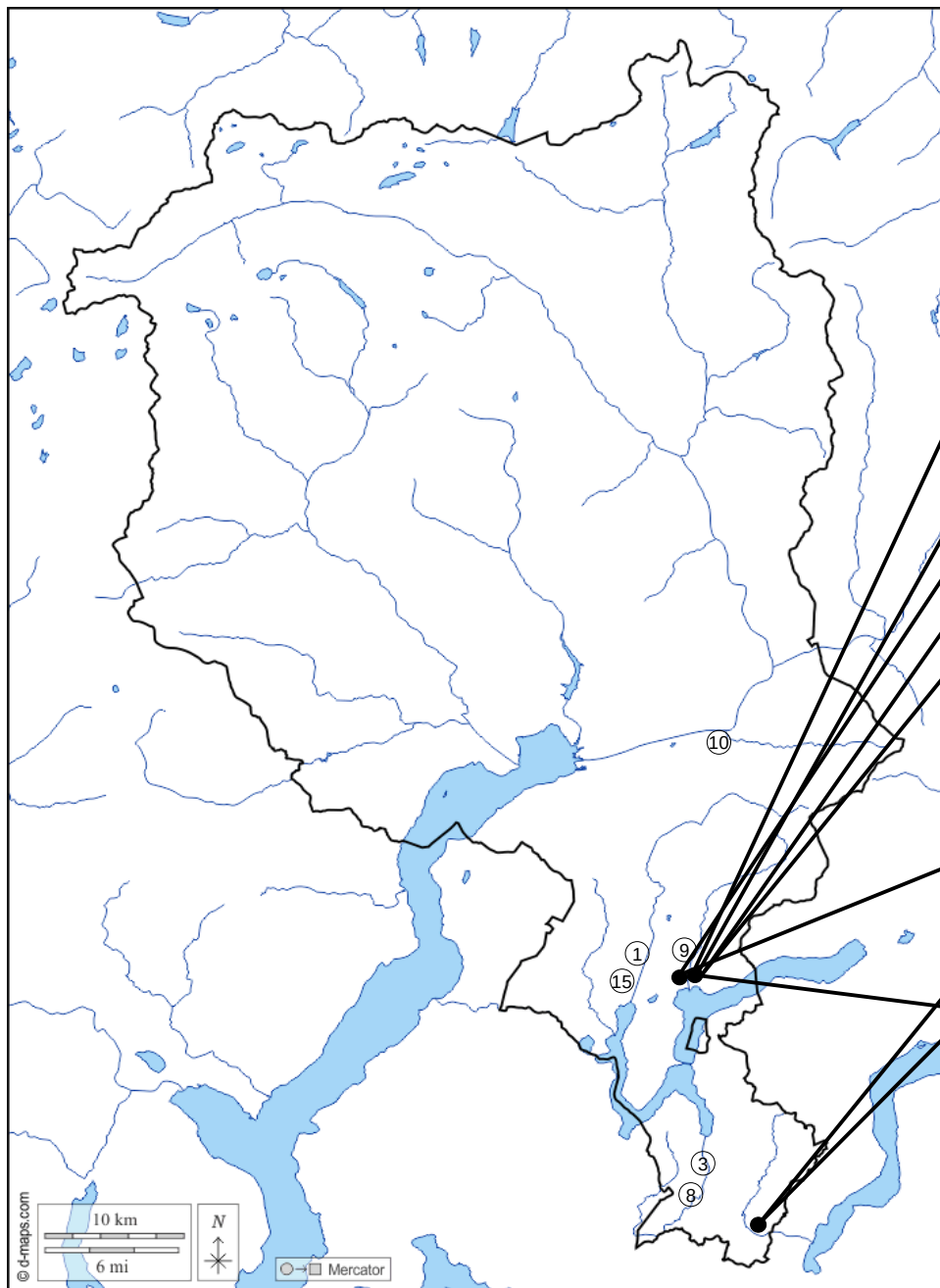
Luogo e data

USI
prof. Luisa Lambertini,
Rettrice

USI
Dr. Giovanni Zavaritt,
Segretario Generale



Companies' Locations



- 1 **4bases**
- 2 **4BMC**
- 3 **Amwer consulting**
- 4 **BANANA CONTABILITÀ**
- 5 **BRIGHTSIDE CAPITAL**
- 6 **claranet**
- 7 **code lounge**
- 8 **DELVI TECH**
- 9 **Duferco**
- 10 **EOC**
- 11 **EXM**
- 12 **Mondo Software**
CONSULENZA E SERVIZI IT
- 13 **TECHNOLOGY**
- 14 **REPX**
- 15 **weID**
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