



26 September 2023
AgileMasters

Project Team Setup

CT0090 · Software Engineering Project



Ca' Foscari
University
of Venice

Team Information

In the vast realm of software engineering, a new team emerges from the shadows, ready to tackle the challenges of the digital age. We are **AgileMasters**, a group of dedicated software engineers, united by our passion for creating impactful software solutions. Our synergy, combined with our diverse skill sets, positions us uniquely to address the multifaceted demands of modern software projects.

Members and Roles

Each member of our team has been meticulously chosen and assigned specific roles in line with the SCRUM methodology. This ensures a balanced distribution of responsibilities and efficient project management.

Member Name	Mail	Phone	Role
André Ramolivaz	891923@stud.unive.it	(+39)3423779629	Developer
Alberto Tomasin	892614@stud.unive.it	(+39)3701556359	Product Owner & Developer
Simone Dinato	892539@stud.unive.it	(+39)3428232006	Developer
Mirco De Zorzi	891275@stud.unive.it	(+39)3319174 467	SCRUM master & Developer

Role Descriptions

- **Product Owner:** The visionary, responsible for defining product features, prioritizing them, and ensuring the team's efforts align with stakeholder expectations.
- **Scrum Master:** The facilitator, ensuring the team adheres to Scrum practices, removes obstacles, and works efficiently.
- **Developer:** The builder, responsible for designing, coding, testing, and implementing the features defined by the Product Owner.

Initial Tools and Infrastructure identified

In our quest for excellence, we have chosen to harness the power of **Jira** for project management and **Confluence** for documentation. These tools, with their robust features and integrative capabilities, will be instrumental in our journey. The project has been initialized, the team has been set up, and the first tasks have been assigned. With these tools as our allies, we are poised to navigate the complexities of our project with clarity and precision.

Document Versioning

To ensure transparency and traceability, we maintain a version history of this document. Each version captures the evolution of our team's setup and decisions.

Version	Date	Description
1.0	20 September	Initial document creation and writing.
1.1	23 September 2023	Attached CVs of team members.
1.2	29 September 2023	Added a new member and attached their CV.

Attachments

For a deeper understanding of each member's qualifications and experiences, the CVs of all team members are attached at the end of this document. We believe that our collective expertise will be the cornerstone of our project's success.

ANDRÉ RAMOLIVAZ

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EXPERIENCE

PwC - PricewaterhouseCoopers

Incoming Trainee in Robotic Process Automation & Data Analytics

Milan, Italy (10/2023 - present)

ECB - European Central Bank

Data Scientist Intern, Supervisory Technology and Data Division

Frankfurt, Germany (09/2022 - 12/2022)

- Developed and implemented data cleaning and preprocessing techniques using R for a 4TB of unstructured data which **reduced total process time by 15%**.
- Led a machine learning project in Python utilizing Decision Tree, Random Forest, and XGBClassifier to predict NPE/PE exposures during banking supervision. Addressed class imbalance through supervised techniques such as Cluster Centroids under-sampling, **enhancing model performance and accuracy by 20%**.
- Developed a Flask web app for the prediction, integrating the previous trained machine learning models using Pickle, and crafting an intuitive user interface with React for input submission and result presentation.
- Contributed to developing a software tool for ECB's internal models, **enhancing the language model's NER by 10%** using Reinforcement Learning.
- Acquired Scrum project management expertise and applied it to effectively coordinate a huge text mining project involving external and internal stakeholders, while managing and tracking IT consultant tasks.

ITPR Corrado Gex

Substitute Teacher of Calculus and Statistics for High School

Aosta Valley, Italy (09/2021 - 02/2022)

- Prepared lessons and exams for 70+ students from different classes and levels.
- Supported students in analytical assignment and provide classes to fosters specific topics.

ARPA Valle d'Aosta

Software Engineer Intern, Integrated Technology Services Division

Aosta Valley, Italy (09/2020 - 12/2020)

- Developed an Arduino-based prototype for tracking environmental parameters, with a sensor system that wirelessly transmits data to a mobile app for trend analysis and possible climate implications.
- Created a phone app using Flutter to collect data, and display the results with additional data analytics insights.
- Presented the team work project to the BB-CLEAN conference for the Interreg Alpine Space project and to Edutech 2021 as a low cost robotic prototype of eco-sustainability and environmental monitoring.

SELECTED PROJECTS

A Social Network Analysis of Central Banks

[[Social graph](#) | [Report](#) | [Code](#)]

- Implemented web-mining and API libraries to collect data and preprocessing techniques using Pandas.
- Performed data cleaning (e.g. tokenization, stopword removal, and lemmatization), applied NLTK and VADER with domain-specific dictionaries to enhance tweet sentiment and emotion analysis.
- Extracted and visualized top hashtags using Pandas and Seaborn, examining frequency and sentiment relationships.
- Applied Gensim's LDA for topic extraction and NetworkX for topic-word association visualization.

TFY-My Bank: A Fictional Trading App

[[Report](#) | [Code](#)]

- Designed and implemented a stock data processing pipeline using Alpha Vantage API and an ad hoc relational MySQL database for data retrieval, storage and analysis.
- Developed an optimized web interface with secure user authentication and CSRF token protection using PHP and Bootstrap, enabling real-time visualization and analysis of historical stock data and transaction made by the user.
- Implemented an algorithm to create candlestick charts for displaying stock data using Google Charts API.

EDUCATION

Ca' Foscari University of Venice

Bachelor of Computer Science

(2021 - present)

SKILLS

Technical Skills R, Python, C, C++, Java, PHP, HTML, CSS, JavaScript, MySQL, PostgreSQL
Languages Italian (native), French (fluent), English (fluent)

SKILLS

- **Languages:** Golang, Java, Python, C++, C, Javascript, Lua
- **Databases:** Kafka, Prometheus, Loki, ElasticSearch, Redis, Cassandra, Postgres
- **Tools:** V8, AWS, Kubernetes, Helm, Serverless, Pulumi, Ansible, Docker, gRPC, Git, Linux
- **Skills:** Distributed Systems, Data Driven Architecture, Web API Reverse Engineering
- **Natural Languages:** Italian (native), English (proficient), Slovakian (second language)

EXPERIENCE

- **Sysdig** REMOTE, ITALY
Data Platform Engineer 2 February 2021 - Present
 - **Development:** Developed and maintained Sysdig Monitor's real-time time-series database read path:
 - * Developed a set of features to optimize a query's AST to prevent unnecessary computation and data retrieval
 - * Developed a set of features for AST sub-tree matching and push-down of complex expressions to the storage layer.
 - * Reduced query evaluation times by up to 50% by parallelizing AST sub-trees evaluation.
 - * Reduced network traffic between storage layer and query engine by up to 30% by optimizing the data transfer protocol.
 - * Reduced cpu and memory usage by 30% while increasing throughput by 30% by optimizing de-serialization logic.
 - **Ops:** Participated in on-call rotations to guarantee SLAs in case of incidents and system instabilities.
- **Technological Systems by Moro** AZZANO DECIMO, ITALY
Software Development & Penetration Testing & Reverse Engineering June 2019 - August 2019 & December 2020 - March 2021
 - **Development:**
 - * Developed a monitoring framework based on a serverless architecture hosted on AWS.
 - * *Simultaneous localization and mapping* and *automated guided vehicles* in C++ & R.O.S.
 - **Penetration Testing:** Carried out a network vulnerability assessment and penetration test.
 - **Reverse Engineering:** Reverse Engineered stripped firmware for an STM32 microprocessor.

TALKS

- **KubeCon 2023:** Kubernetes Defensive Monitoring with Prometheus

PROJECTS

- **FlagOps:** Fully fledged, distributed and highly-available infrastructure to facilitate Attack/Defence CTF competitions.
 - Complete CI/CD automation with Github Actions and deployment through AWS ECR, Kubernetes and Helm charts.
 - Cluster-aware service to deploy and orchestrate swarms of version controlled short-living containers;
 - A L7 reverse proxy and host based intrusion detection system written in Go leveraging network traffic analysis, system monitoring, and kernel level tracing to detect and block potentially malicious connections.
- **sentry:** High performance reverse proxy and load balancer written in C++ with support for Lua scripting.
- **hort:** Data mining and indexing framework written in modern C++.
- **pka2xml:** Packet Tracer utility tools obtained through reverse engineering.
- **loki-cpp:** Modern C++ client for Loki, a log aggregation system.

EDUCATION

- **Ca'Foscari** VENICE, IT
Bachelors in Computer Science 2021 - present
- **I.T.I.S J.F.Kennedy** PORDENONE, IT
Diploma in Information Technologies 2016 - 2021

ADDITIONAL EXPERIENCE & ACHIEVEMENTS

- Participated at Hack-A-Sat 4 & DEFCON 31 *Capture The Flag* competitions with *mhackeroni* and placed respectively 1st and 10th place.
- CyberChallenge 2022 & 2023 Network Security and Hardening mentor at Ca'Foscari.
- Regularly participate and organize cyber-security related meeting at Ca'Foscari.
- Qualified at a national programming challenge organized by the *National Interuniversity Consortium for Informatics* at the University of Pisa and subsequently attended a 3 months long cybersecurity course at the University of Padua with topics such as: reverse engineering, system security, web security, and cryptography. At the end of this course participated at a jeopardy CTF hosted by the organizers of the course.
- Attended a week-long *advanced algorithms* course at San Servolo International College for students qualified at the 2019 National Olympiad of Informatics. The topics ranged from dynamic programming to greedy algorithms, and graphs.
- Won the M.I.U.R. prize at the *National Robotic Olympics* of 2019 with a remotely operated drone for environmental data collection, processing, and analysis. Presented the prototype at the Italian Ministry of Education during the National Day for the Environment.
- Participated at 3 national Rubik's cube competitions in Milan, Verona, and Bratislava (SK) with a personal best of 18.67 seconds.

ALBERTO TOMASIN

BA Computer Science

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🌐 therealtoma

🌐 alberto-tomasin

ABOUT ME

Technical Skills: R, Python, PostgreSQL, PostGIS, MySQL, PHP, HTML, CSS, JavaScript, Java, C, C++, Bash

Interests: data analysis, data manipulation, remote sensing, backend development

Languages: Italian (native), English (fluent)

WORK EXPERIENCE

Istituto Zooprofilattico Sperimentale delle Venezie

Software developer, Legnaro, Padova

🔧 R Python PHP SQL PostGIS

📅 December 2021 – Present

- Development and maintenance of a tool internally used by veterinarians to record, monitor and manage avian influence in Europe.
- Developing a GIS web app to help WOAHA manage and store its geospatial data.
- Developing and maintaining a GIS tool designed to help veterinaries record, store and manage African Swine fever in the Italian soil.
- Using of remote sensing techniques to extract images from SENTINEL and MODIS satellites and produce different indexed (vegetation, temperature)
- Responsible for the maintenance of GIS apps and remote sensing procedures.

IT Consultant

JEVE - Junior Enterprise of Venice, Venice

🔧 PHP CSS HTML Wordpress Python

📅 May 2022 – Mar 2023

- Managed IT's infrastructure.
- Developed and secured web applications, ensuring robust cybersecurity measures.
- Automated key processes, mitigating operational and IT risks. (e.g., automated email profiling, web scraping for lead generation)

EDUCATION

Bachelor's degree in Computer Science

Ca' Foscari University of Venice

📅 25/30 GPA

📅 Sept 2021 - Present

- Relevant courses: Data and Web Mining, Data Analysis, Predictive Analysis, Algorithms and Data Structures, Probability and Statistics, Object Oriented Programming, DataBases.

Diploma in informatics

I.T.I. Severi Padova

📅 70/100

📅 Sep 2016 - June 2021

RELEVANT PROJECTS

EURResearchHub - 2023

University course project

🔧 Python HTML HTML CSS PostgreSQL

🌐 therealtoma/EURResearchHub

- Leveraged the robust Flask framework to deliver a lightweight and modular web application experience.
- Incorporated advanced authentication routes to safeguard user data and ensure secure access.
- Utilized structured database models for seamless data management and retrieval.
- Created a dedicated utility module to streamline common tasks and enhance code reusability.

Dama - 2023

University course project

🔧 C++ Docker

🌐 therealtoma/Dama

- Leveraged Docker containers to simulate real-world environments, meticulously debugging and ensuring zero memory leaks in the game's core logic.
- Implemented a sophisticated game loop in play.cpp, incorporating move validation, player turn management, and game state tracking.
- Designed a detailed player class in player.cpp and player.hpp, encapsulating attributes such as player color, available moves, and capturing mechanics.
- Developed a robust move verification system in verify.cpp, ensuring only valid moves are executed, preserving the game's strategic depth and integrity.

SIMONE DINATO

Undergraduate BA Computer Science

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🌐 [simonedinato](#)

💻 [simonedinato.github.io](#)

ABOUT ME

Technical Skills: C/C++, R, Python, Java, PostgreSQL, MySQL, PHP, HTML, CSS

Interests: Data Analysis, Trading, Web design, UI/UX, Emotional Intelligence, Personal Development.

Languages: Italian (native), English (fluent), Spanish (elementary)

WORK EXPERIENCE

IT Analyst Intern

Nuova Ompi S.R.L., Padua

🔧 Microsoft SQL LIMS Decisyon

📅 July 2023 – Sep 2023

- Reduced SQL procedure execution time from 10 minutes to just 3 seconds, achieving a 99.6% computational efficiency boost.
- Spearheaded the integration of data monitors in production areas, paving the way for advanced statistical analysis with Decisyon.
- Enhanced device tracking in the production line, slashing remote access times.
- Leveraged LIMS for complex data queries, streamlining data retrieval and analysis processes.
- Collaborated with the production team to integrate LIMS with Microsoft SQL, ensuring real-time data synchronization.
- Designed and implemented custom SQL scripts to automate data extraction from LIMS, reducing manual intervention.

IT Consultant

JEVE - Junior Enterprise of Venice, Venice

🔧 PHP CSS HTML WORDPRESS PYTHON

📅 May 2022 – Mar 2023

- Led data analysis for SMEs, leveraging vast internal and external datasets.
- Developed and secured web applications, ensuring robust cybersecurity measures.
- Automated key processes, mitigating operational and IT risks. (e.g., automated email profiling, web scraping for lead generation)
- Utilized Python for data processing and analysis, extracting valuable insights.
- Implemented WordPress plugins to enhance website functionality and user experience.

EDUCATION

Bachelor's degree in Computer Science

Ca' Foscari University of Venice

📊 26/30 GPA

📅 Sept 2021 - Now

- Relevant courses: Data and Web Mining, Calculus, Data Analysis, Predictive Analysis, Linear Algebra, Algorithms and Data Structures, Probability and Statistics, Software Engineering, DataBases.
- Activities: Consultant student association JEVE - Junior Enterprise Ca' Foscari Venezia.

RELEVANT PROJECTS

EURResearchHub - 2023

University course project

🔧 Python HTML HTML CSS MySQL

🐙 [simonedinato/EURResearchHub](#)

- Leveraged the robust Flask framework to deliver a lightweight and modular web application experience.
- Incorporated advanced authentication routes to safeguard user data and ensure secure access.
- Utilized structured database models for seamless data management and retrieval.
- Created a dedicated utility module to streamline common tasks and enhance code reusability.

Json Parser - 2023

University course project

🔧 C++

🐙 [simonedinato/CT0442-JsonParserProject](#)

- Seamlessly set up and managed project builds using the provided CMakeLists.txt.
- Efficiently parsed and manipulated JSON data through the *json.cpp* module.
- Ensured the reliability of JSON operations with the dedicated *test_json.cpp*.
- Showcased the project's primary features in the main.cpp file.