
RAGAMA

Introduction

The project residency "Raqama" by 3DXR, 3D Industrial Design, DIRMA and EVRIAT is an interdisciplinary space for designing and producing a fashion collection through 3D technologies and ancient local practices. Granted by the Culture Moves Europe Program of the European Commission, the project aims at bringing cutting-edge innovation and transdisciplinarity to Southern Italy, creating a context of design and artistic experimentation on fashion production processes. Intending to integrate manufacturing and 3D advanced technologies, the project aims to reduce the environmental impact of production processes while promoting research into the future of clothing. Through the use of 3D body scans and parametric codes, combined with direct 3D printing on fabric and the use of sustainable materials, Raqama redefines the boundaries between craftsmanship and automation, between tradition and innovation.

Topic

"As long as there are rebels among us, we have reason to hope that our society can be saved. The rebel is the standard-bearer of the visionaries, who gradually increase the ethical standing of man". René Dubos

Rebellion is a short-circuit within identifiable codes of a system that proceeds in a recognized direction. A necessary socio-cultural rule, rooted in the software of every human being, the rebellion sounds like a behavioural contract with themselves to define the boundaries of their identity.

Rebellion is a primordial act. The individual has to assume its own evolutionary responsibilities contrasting with parental personalities. Through the confrontation it takes possession of his own behavioural independence. This youthful tendency to rebellion is generally referred to as rebelliousness, which in the Romantic literature takes the form of disobedience to ancient models, rules and dogmas of rationality of the Enlightenment type.

If shared, if therefore embraced by the network of values that constitute the cultural capital of a community, rebelliousness describes a social attitude to both power and the cultural, political and economic authority of a context, like in Barletta and Bari. From the arrival of the Saracens to the fascist resistance, passing through the “Disfida” to the insurrectional movements of the '800, the city that dominates the land of Ofanto preserves features of civic and cultural rebellion.

Through the history and cultural filaments of this land, the RAQAMA residence investigates rebelliousness as a critical cultural attitude, weaving the wire of a texture that moves between local and global, as Dubos himself suggested. " Think Globally, Act Locally", rebelliousness is an opportunity to explore the Souths and rethink the power relations of the Norths with it.

Funded by
the European Union

Methodology

RAQAMA is a multilayered participative cultural exploration through fashion design that synthesises traditional craftsmanship with 3D technologies. Anchored in an interdisciplinary framework, the project is driven by a comprehensive methodological approach that blends design thinking, participatory design, and digital fabrication. This fusion of methodologies offers a platform for innovation, allowing participants to engage deeply with local immaterial heritage while experimenting with modern technological tools.

First of all, RAQAMA is grounded in participatory design. It means sharing authorship and interpreting a cultural ecosystem putting particular approaches and perspectives at the service of the global. This implies a delicate balance among the designers, the local social fabric, the cultural and geographical elements that characterised a context, in order to foster the sense of ownership and authenticity in the final output.

The methodology favours the idea that cultural production should be at the service of the community. Indeed, participatory design is not just a tool for gathering input, but it means empowering participants, giving them a voice in the creation of the project's outputs. In this direction, during the initial phase, participants immerse themselves in the local context, to uncover the cultural, architectural, and sociological nuances that define this community, providing a fertile ground for creative inspiration. This qualitative research approach involves participant observation, interviews, and visual documentation, providing a rich cultural context that informs the design process. The detailed cultural insights gained from ethnographic research are critical in ensuring that the project's outputs are not only aesthetically pleasing but also culturally respectful and meaningful. This methodological approach supports the project's aim to document and preserve traditional textile practices while exploring their potential reinterpretation in a modern context.

Consequently, the following textile production is informed by craft ethnography (Marchand, 2010), focusing on the embodied knowledge and skills of local people. Participants engage in hands-on workshops where they learn and document various embroidery and weaving techniques. These sessions are complemented by participatory design methodologies, where local artisans share their knowledge and collaborate in the creative process.

At the same time, digital fabrication methodologies provide the technical backbone for the RAQAMA project's exploration of new materials and production techniques. This approach encompasses the use of technologies such as 3D scanning, modeling, and printing, which are essential for the digitalization and material experimentation phases of the project. Digital Fabrication allows for the precise reproduction of traditional crafts in digital formats and the creation of new forms that blend traditional and modern aesthetics. This methodology supports the project's exploration of innovative design solutions, enabling the customization and rapid prototyping of garments. It also plays a crucial role in integrating sustainable practices into the design process, as it allows for efficient use of materials and reduces waste through accurate production.

Funded by
the European Union

These methodologies are not applied in isolation but are interwoven throughout the project's phases. Participatory Design ensures that the project remains user-centred and collaborative, fostering an inclusive environment where all stakeholders can contribute to the creative process. Digital Fabrication and Ethnographic Research provide the technical and cultural foundations, enabling the project to explore new design possibilities while grounding these innovations in a deep understanding of local traditions. The integration of these methodologies allows RAQAMA to create a fashion collection that is both innovative and deeply rooted in the cultural narratives of the community, ensuring that the outputs are not only innovative but also socially and culturally sustainable.

The mentorship and training approach is based on the concepts of iteration, open work, interdisciplinarity, non-linearity, cooperation, informality and learning-by-doing. Participants will cooperate, develop new skills (both hard and soft), seek "connective solutions" to "common problems", each of them contributing to the realisation of a complex design beyond individuality.

Methodological References

Participatory Design Going Digital: Challenges and Opportunities for Distributed Place-Making (2023)
This study explores the digital transformation of participatory design (PD) methodologies, emphasising the importance of reflective and empowering practices Link to article

Research on the Application of Participatory Design in the Digitalization of Traditional Culture (2023)
This research examines the application of participatory design principles in preserving and digitising traditional cultural practices. It focuses on the involvement of local communities in co-creating digital representations of their cultural heritage, ensuring that the digitization process respects and reflects their values and traditions. Link to article

Design for Social Sustainability: Using Digital Fabrication in the Humanitarian and Development Sector (2023)
This paper addresses the use of digital fabrication technologies, such as 3D printing, in humanitarian and development projects. It highlights the potential of these technologies to produce low-cost, customised products that meet specific social needs. The study emphasizes a holistic approach to design for sustainability, considering the social impact of digital fabrication processes. Link to article

Critical and Participatory Design in In-Between the Tensions of Daily Life (2023)
This study investigates the role of ethnography in participatory design. It discusses the challenges of integrating ethnographic methods with digital tools, highlighting the importance of understanding cultural contexts in the design process. Link to article

TechnoFashion2Sustainability: Digital Tools, Modular Strategies, and Participatory Design Approach to Brand Engagement and Customised Solutions (2023)
This reference discusses the integration of digital tools and modular design strategies in

Funded by the European Union

creating sustainable fashion solutions. The study emphasises the use of participatory design to engage communities and consumers in the design process, promoting sustainability through customization and localised production. Link to article

Sustainable Design and Prototyping Using Digital Fabrication Tools for Education (2023)
This article explores the use of digital fabrication tools, such as 3D printing, in educational settings to promote sustainable design practices. It discusses the importance of prototyping in the development of sustainable products and the potential for digital fabrication to facilitate rapid, low-cost production. The research highlights the benefits of makerspaces and FabLabs in fostering innovation and sustainability in design education. Link to article

Program Structure

The residency program is structured into 6 phases, during 7 weeks (50 days). Each phase follows its own methodology and schedule, as reported later in this document. The program structure will be flexible, in order to guarantee both the quality of the output and participants' own activities. In this direction, daily programs will be refined week-by-week, excluding mentorship sessions that would be scheduled time in advance.
Each day will open and end with a plenary session, to recap the advancements of works, desires and needs. During the day there would be two working sessions, one in the morning and one in the afternoon. Some of them would be led by mentors, others would be left free to explore. Moreover, there would be guaranteed spaces to work outside of the project.

Alongside the residency program, it would be organised corollary activities, principally during late afternoon/night, mostly dedicated to networking with the local cultural and artistic context, both in Bari and Barletta. In this direction, each week will have at least one network session and one ending-week aperitivo. In this direction, it is relevant creating sharing and learning moment for both the designers and local community of artists and designers.

Funded by
the European Union

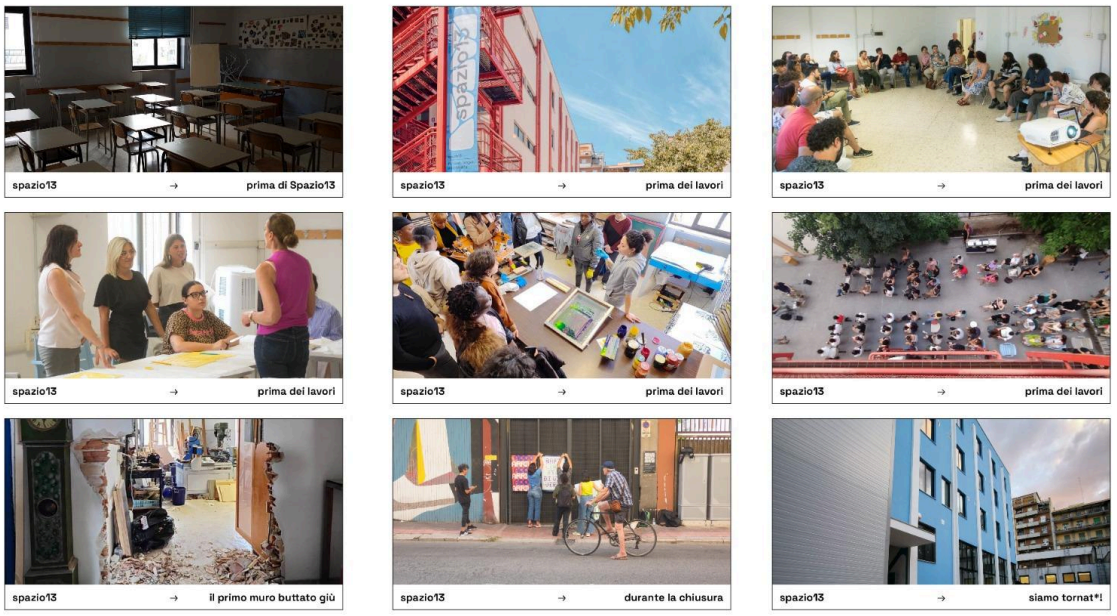
Spaces & Facilities

Bari

Spazio13

Active since 2016, Spazio 13 is a creativity hub dedicated to young people, the result of an urban regeneration process activated in the Libertà district. Indeed, before it was an intermediate school. Since its birth Spazio 13 has been an effective model of public-private management dedicated to culture and creativity, enabling local innovation and providing facilities and competences to local young generations who want to invest in these assets and practices.

During the years it evolved into a benchmark in terms of collective processes and participative governance in Italy, stressing the value of cooperation and local partnership for creative productions.



Facilities

Spazio 13 is distributed on 5 floors, for a total of 1.000 sqm indoor and 500sqm outdoor.

The centre is currently equipped with infrastructure designed to support a wide range of cultural, creative and community activities, fostering interaction, innovation and collaborative learning between community members and external users.

Funded by the European Union

Multi-purpose areas: The mezzanine floor is dedicated to a large open space, ideal for events, workshops and meetings, reflecting the philosophy of hybridization and permeability of the centre.

Creative area: Occupying an entire floor, these spaces are equipped for crafts, digital manufacturing and visual arts.

Co-working and Teaching Spaces: Distributed on each floor, these flexible spaces support independent work and collaboration between professionals and creatives, It is designed to be easily adaptable to different work configurations.

Performance Room: Featuring a parquet floor and minimalist design, this room is versatile for theatre, dance and music, welcoming a variety of artists and groups.

Mindfulness Room: A quiet retreat for mental and physical well-being, ideal for meditation, yoga, group therapies and workshops on psycho-physical well-being.

Multimedia Room: Equipped with advanced technologies for streaming and multimedia productions, this room supports webinars, virtual meetings and digital training, with an adjacent recording studio for audio projects.
Common and Socialising Areas: The entire building is enriched by common spaces that promote informal meetings and relaxation, supporting the general well-being of the frequenters.

Local Actors

Currently, Spazio13 is populated, among the others, by the following organisations and socio-cultural bodies:

- Tou Play - Association of youth animation, gamification for children and European youth mobility projects;
- SOS - Cooperative society for social innovation, social design and digital hacking;
- Ethnic groups - ETS Association for the reception and integration of migrants;
- GEP - Association of over 55 ETS for awareness of peace and community culture;
- Compagnia Licia Lanera - Theatre association and school for the performing arts;
- Social cooperative AL.I.C.E/BIG festival/BIGFactory- ideation, organisation and direction of perforative art festivals and LGBTQ+ artistic production;
- Arti in Libertà - Cultural production association, specialised in cultural design in the European context;
- Davide Partipilo - Individual contemporary artists;

Funded by the European Union

- Grido - ETS Association that deals with social innovation projects for minors through music and creative writing;

- LAN - ETS Association dealing with sustainable architecture and making;

- Scarti - Association that deals with the reuse of waste materials through making and craftsmanship.

Set up for the Residency

Studio - 35mq
Space for remote working and for conducting laptop activity, both for RAQAMA project or for own activities.
Wi-Fi
Desks
Library
Audio & Video Recording tools
Printer

Digital Room - 35mq
Wi-Fi
Desks
Space for digital production and design
3D Scanner - ARTEC Eva
3D Scanner - ARTEC Spider
1 Notebook with Artec Studio software
2 Notebook with Blender software
2 3D printer pvc filament

Funded by
the European Union

Textile lab - 40mq
Space for textile production and experimentation
Wi-Fi
Desks
2 tailor's mannequins
2 home sewing machines with straight stitch
2 macramé boards2 macramé boards, 1 stand to hang garments that we will use to suspend threads and create macramé weavings. and 1 stand to hang garments that we will use to suspend threads and create macramé weavings

Barletta

Istituto Evriat

The Evriat Institute was established to meet the needs of local companies by offering highly specialised training that prepares students for essential professions in fashion manufacturing. In a constantly evolving industry, where new roles are emerging, the product

Funded by the European Union

remains the undisputed protagonist. For this reason, pattern makers, seamstresses, and artisans are highly sought after by companies within the Made in Italy sector. The Evriat Institute offers study programs designed to project the traditional crafts that make Italian fashion unique into the future. It offers both cutting and sewing courses as well as courses for the creation of handmade antique lace. The lessons, available both individually and in groups, facilitate the acquisition of methods and skills, allowing each student to choose and delve into the subjects of greatest interest, whether they are starting from scratch or already possess academic or professional experience in the field.

Facilities

The textile school is divided into three distinct areas, each thoughtfully designed to cater to different aspects of textile creation and garment design, fostering an environment of creativity and precision.

Sewing Room: This space is equipped with state-of-the-art sewing machines, providing a dedicated area for garment construction and sewing projects. The room is designed to accommodate both individual work and collaborative efforts, ensuring a seamless workflow for all users.

Macramé Room: Featuring mannequins, macramé boards, and wall-mounted bars for weaving, this room is tailored for intricate macramé work. The layout encourages experimentation, making it an ideal space for artisans and hobbyists to perfect their craft.

Funded by the European Union GOETHE INSTITUT

Pattern-Making Room: Designed for precision and detail, this room includes large tables for creating paper patterns and a full-length mirror for fitting. The spacious setup supports detailed pattern work and allows for comfortable fitting sessions, ensuring that designs are both accurate and practical.

Set up for the Residency

Textile lab - 40mq
Space for textile production and experimentation
Wi-Fi
Desks
1 Linear Industrial Machine Brother industries S-7200A-403
1 Industrial Cut and Seam SIRUBA 747
1 Household sewing machine Silver crest SCNM 100 A1
1 Household sewing machine Brother JX17FE

Funded by the European Union

1 EASYMAXX MOD ST. 700
1 CUT AND SEW EFFECI Household
4 macramé boards
1 stand to hang garments that we will use to suspend threads and create macramé weavings.
10 tailor's mannequins
Crochet hooks, brushes, and macramé tools

Funded by
the European Union

Process

Phase 1 - Territory and Stories

09.23.24 - 09.30.24

INPUT	OUTPUT	TRAINING OUTPUT
Visual Elements	Projects' Moodboards	Co-creation methodologies
Local Materials		Participative Design
Community stories		

The first phase of the RAQAMA residency focuses on an in-depth exploration of the Libertà neighbourhood in Bari, and local communities. Libertà is a historically significant and multicultural area, characterised by a mix of cultures, ethnicities, and socio-economic transformations. Known for its complex socio-cultural dynamics, the neighbourhood changed drastically during the time, due to the economic crisis of the manufacturer.

Process

Immersing designers in the cultural, architectural, and sociological landscape of the Libertà district in Bari, fostering a comprehensive understanding of the local context and engaging with the community, particularly women, through a structured co-creation process.

Observation & On-Field Exploration

The exploration will be conducted first of all in order to emphasise the traditions and crafts of the area of Bari and Barletta, and generally the south of Italy, with a particular focus on textiles and artisanal practices. Participants will be led in a detailed study of local craftsmanship, learning about traditional techniques, materials, and motifs used in textiles. This exploration will include visits to local markets, artisan workshops, and cultural institutions. The aim is to provide designers with a deep understanding of the cultural narratives embedded in local crafts, which will serve as a foundation for their creative processes.

Second of all, participants will explore the architectural elements of the territory, analysing how the built environment reflects the cultural and historical evolution of the area. This analysis will include guided tours of notable buildings, discussions with local architects and photographic documentation. The architectural investigation aims to inspire designers by highlighting the interplay between space, structure, and aesthetics, potentially influencing the design of garments and patterns. Moreover elements of the architectural environment can be scanned in order to feed the creative and production process of the designers.

Funded by the European Union

Finally, sociological aspects would be explored, regarding community dynamics within Libertà, with a particular focus on the experiences and narratives of local women. This investigation will be facilitated through a co-creation workshop, where designers will collaborate with a dedicated group of local women, as explained later in the process.

Collecting Visual Elements

Each artist will select visual elements that resonate with the theme of rebellion, textures, shapes, monuments, objects, organising them into an image archive with photos and symbolic description of each element.

This stage involves a systematic and immersive approach to documenting the visual and aesthetic characteristics of the area, which will serve as inspiration for the design process. The collected visual elements will provide a comprehensive reference for designers, allowing them to draw upon authentic local aesthetics and cultural motifs. This process is not just about capturing the physical appearance but also understanding the symbolic meanings and stories embedded in the visual landscape. The methodology employed in this stage is a blend of visual anthropology and urban ethnography. These approaches emphasise the use of visual media to document and analyse cultural phenomena. The goal is to create a visual archive of elements that can be used for the creation of the artistic moodboards.

The outcome of this stage is a comprehensive visual repository that encapsulates the aesthetic and vibrancy of Libertà and the community of people we are going to work with. This repository will serve as a foundational resource for the subsequent stages of the residency, particularly in the design and creation phases. The visual elements collected will not only inspire the participants but also ensure that the final outputs resonate with the local culture and community values.

Co-creation Workshop

This group, representative of the neighbourhood's diverse population, will share their stories, perspectives, and cultural knowledge. Through participatory design and narrative inquiry, designers will gain insights into the social fabric of the community.

Through this workshop we will explore the concept of rebellion as an imaginary journey of transformation. Starting with visual elements collected by artists in the city, we will lucidly dream up new icons of rebellion with the community, imagining the rebellious landscape we want to embody.

How can we make rebellion something visible and beautiful?

Funded by the European Union

What kind of rebellion do we wish to embody?

Who do we need to become in order to realise the purpose of our rebellion?

Through the community practice of storytelling, each person will share his or her own story of rebellion to create a common ground of feeling and understanding on the topic, so that subsequent work will be nurtured from this subsoil. Through the previous work of collecting visual elements, through a process of co-creation, artists will work with the community to create new rebellion icons to bring to life visionary elements that represent each member's personal dream of rebellion. These icons will then be integrated into the moodboard as elements of inspiration for the creation of the final works. The objective is integrating visual elements of the Bari context and narrative suggestions from the local community in a process of co-creation that can feed into the next phases of the residency.

Methodological pillars that would be followed:

- Collective storytelling: it engages members of a group in sharing personal stories about a common theme, creating an inclusive and trusting environment. This approach fosters group cohesion, stimulates empathy and promotes critical and creative reflection, building a common and deep understanding of each other's experiences.

- Taxonomic map: it is a visual methodology for organising and representing complex information in a structured and hierarchical manner. This tool facilitates understanding of relationships among data, supports systematic analysis, and enhances communication and knowledge sharing within a group by displaying information in a clear and organised manner.

- Crafting imaginaries: during this work phase, participants classify and hierarchize the selected images, organising them into subcategories and levels of relevance. This process facilitates layered compositions that incorporate symbolic descriptions. The compositions are then shared for collective review, gathering feedback to refine the symbols. Next, artists digitise and aesthetically refine the symbols, which are ultimately included in the final moodboard, inspiring the next stages of the residency journey.

Visual Research & Moodboard

The "Visual Research & Moodboard" stage focuses on synthesising the previous cultural, speculative and anthropological data collection into cohesive visual concepts. This process involves an in-depth analysis of the gathered materials and the creation of moodboards that encapsulate the aesthetic direction and conceptual themes of the projects. This stage serves as a bridge between research and design, transforming raw visual inputs into organised, inspirational outputs that guide the creative process.

The methodology for this stage integrates thematic analysis with visual storytelling. Thematic analysis involves identifying patterns and themes within the visual data, while visual storytelling focuses on arranging these elements in a narrative format that conveys a specific

Funded by the European Union

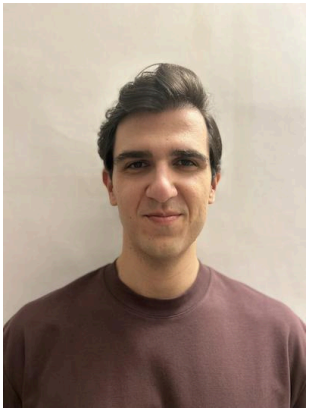
mood or concept. This dual approach ensures that the moodboards are both conceptually rich and visually compelling.

Based on the identified themes, participants will develop a conceptual framework that outlines the core ideas and narratives they want to explore in their designs. To ensure that the moodboards also reflect the community's perspective, a validation moment will be organised. This step involves cross-referencing the visual elements with the stories and perspectives shared by the community.

Program

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning	Arrival	Observation & On-Field Exploration	Collecting Visual Elements	Introduction to the Community	Visual Research & Moodboard	Visual Research & Moodboard
Afternoon	Introduction to Raqama	Observation & On-Field Exploration	Collecting Visual Elements	Co-creation Workshop	Visual Research & Moodboard	Visual Research & Moodboard
Night	Dinner together				Networking Aperitivo	

Mentors



Carlo Ferretti

Graduated in Cultural Economics and Entrepreneurship at the Erasmus University of Rotterdam, Carlo Ferretti is a researcher and public value designer. He designs projects and policies to foster innovation and creative entrepreneurship for the development of territories and urban areas. He is the founder of 3DXR, a startup company for the 3D digitization of creative SMEs business. Moreover, from 2021, he is affiliated to Metalab Harvard, investigating the potentiality of technology in relation to culture and creativity.

Antonio Franco

Graduated in philosophy, Antonio Franco continued his research in the practical application of this discipline. Specialising in transformational leadership and organisational design, he guides strategic change in organisations to stimulate conscious innovation and sustainable growth through a human centred approach.

Funded by the European Union

Local leaders

Paula Ferreras

She was born in 2002 in San Sebastián, Spain. Graduated in Textile Art at the Art and Design School "Casa de los Picos" in Segovia, she focuses on blending traditional and contemporary textile in Bari.

Paola Di Marzio
Art Historian and Cultural Manager, she is the Director of the Municipal Anthropological Museum of Bari.

Ana Estrela

She was born in Salvador de Bahia (Brazil) where she became a dancer and choreographer assistant for the Companhia Brasiliana of Dancas Populares. In 2013, under the name of Ethnic Cook, she carried out a project to promote interaction between migrants and natives through gastronomy. It has created four street food festivals with Eataly Bari, the first ethnic canteen in southern Italy and the first multi-ethnic social bistro. The project, which has joined the Food for inclusion and UNHCR platform, was chosen as one of three best practices in the South that enhance migrants' skills.

Other local leaders will be announced.

Funded by
the European Union

Phase 2 - Material Research

09.30.24 - 10.07.24

INPUT	OUTPUT	TRAINING OUTPUT
Projects' Moodboards	Material Map	Mood Board Refinement
Community Stories	Samples of personalised weavings	Macramé Knowledge and skills
		Concept Identification

The second phase of the RAQAMA residency focuses on learning ancestral hand embroidery practices. During this week, designers will study traditional embroidery techniques, developing their own styles and patterns. They will also be guided in sourcing materials that inspire the textures to be recreated in the final garments. The output of this phase is to collect samples of woven materials and create a material map, which will serve as a reference for the next stages of the project.

During this week, participants will first engage in exercises that associate images with textures to inform their project. They will also learn the basics of macramé, and together it will be evaluated the potential of the knots learned for garment creation. Following this, participants will delve into more advanced macramé techniques.

Process

The second phase of the RAQAMA residency is structured into several detailed stages to guide designers through the learning process.

Review of the artistic moodboard

The week begins with a review of the artistic mood board created in the previous phase. This mood board, which includes images and inspirational textures, serves as a tool to understand the direction each participant has taken. Participants will discuss their interpretations, and this discussion will help identify which types of weaving and textures might be most interesting and relevant for their projects.

Building on the mood board review, designers will identify key concepts and themes that will guide their work. This step involves pinpointing the essential elements and aesthetic goals they wish to incorporate into their final garments.
Designers will engage in exercises that involve associating images with textures. These exercises help in visualizing how abstract ideas can be translated into tangible textile designs, ensuring that the final pieces are cohesive with the identified key concepts.

Funded by the European Union

Macramé

During this phase, participants will be introduced to the art of macramé, focusing on its historical context and Mediterranean origins. Understanding the cultural background of this technique will enrich their appreciation and application of macramé in their designs.

Macramé is a form of textile art that involves knotting cords in various patterns to create decorative and functional items. The word "macramé" is believed to have originated from the Arabic word "migramah," meaning "fringe" or "embroidered veil," reflecting the decorative use of the technique.

The history of macramé can be traced back to the 13th century when Arabian weavers used knotting techniques to finish the edges of hand-loomed fabrics. The craft spread across Europe through the Moors, who brought it to Spain during their conquests. From Spain, macramé became popular in Italy and France, where it was used to create intricate designs on household items and clothing. During the 17th century, sailors played a crucial role in popularizing macramé. As they traveled the seas, they used macramé techniques to pass the time and create useful items like hammocks, belts, and nets. They traded these creations at various ports, spreading the knowledge and practice of macramé worldwide. This maritime connection is why macramé is often associated with nautical themes. The Mediterranean region, with its rich history of trade and cultural exchange, played a significant role in the evolution of macramé. The intricate designs and knotting techniques were influenced by various cultures around the Mediterranean basin, including Italian, Greek, and Turkish traditions.

By learning about the rich history and Mediterranean origins of macramé, participants will gain a deeper understanding of the cultural significance and timeless appeal of this versatile craft.

Basic Knots and Tools

Designers will learn the basic knots of macramé, along with an introduction to the tools they will use. This hands-on instruction is crucial for building a solid foundation in macramé techniques.

The week will conclude with practical exercises using the basic knots learned. Participants will experiment with different patterns and structures, evaluating the potential of these knots for garment creation. This practice will prepare them for more advanced techniques and the incorporation of macramé into their final designs. The output of this phase is to have learned the creation of a variety of knots, which will first form a material mood board and subsequently be used in the final garments.

Funded by
the European Union

Program

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning	Review of the Artistic Mood Board		Project Planning and Selection of Threads	Festoons Knot	Continuation of Garment Development	
Afternoon	Introduction to Macramé	Teaching Basic Knots and Tools	Commencement of Preparatory Work for Garment Creation	Practice with the Festoons Knot	Continuation of Garment Development	
Night					Networking Aperitivo	

Mentors

Marianna Dinuzzi

Graduated in Fashion Design at IED, during her studies she honed her manual skills working at National Opera Theatre's dressmaking. She worked as assistant product manager at Givenchy and then took the role of Product Manager for brands such as GCDS and Barrow. Together with Sara Sfregola, she founded the Evriat institute with the aim of training experts in the textile sector in southern Italy and founded Dirma, for which she is designer and weaver.

Sara Sfregola

With a career in diverse fashion background, Sara transitioned from creating wedding dresses to pattern making for children's clothing companies or streetwear. In Barletta, she founded Evriat, a school where she teaches cutting, sewing, and the ancient traditions of weaving and embroidery. By sharing her extensive experience and methods, Sara contributes to the growth of technical/creative teams in various areas of the fashion system.

Funded by the European Union

Local leaders

During this phase, participants will work alongside a community of local women that, led by the mentors, will share their own manual practices of knitting.

Funded by
the European Union

Phase 3 - Digitalization and 3D Material Research

10.07.24 - 10.14.24

INPUT	OUTPUT	TRAINING OUTPUT
Projects' Moodboards	Exploration and Collection of 3D visual elements through scanning	3D Scanning
Samples of personalised weavings	3D printed prototype of possible items of the projects	3D Modelling
Materials Map	Body Scanned	3D Printing

The third phase of the RAQAMA residency, "Digitalization and 3D Material Research," focuses on integrating advanced digital technologies with traditional crafts and materials. This phase involves the use of 3D scanning, 3D software, modelling, and 3D printing technologies to support designers experimenting the creation of textile output partially based on additive manufacturing. It would be done digitising physical elements, experimenting with materials, and laying the groundwork for creating innovative, phygital (physical and digital) fashion pieces.

The primary objective of this phase is to equip designers with the skills and knowledge necessary to utilise 3D technologies. During this phase the training component will be intensified in order to be sure that all the designers have the foundation to proceed the creative exploration, making sure these technologies would be properly applied. In order to do so, mentors will keep supporting the group during phase 3 and phase 4.

This phase is so characterised by iterative processes of scanning, modelling, printing, and refining, allowing for continuous exploration and innovation.

Process

3D Scanning

Led by the Engineering Department of the University of Salerno, participants will receive comprehensive training on 3D scanning technologies, including both handheld and stationary scanners. The training will cover the basics of 3D scanning, including setup, calibration, and data capture. Once trained, participants will apply these skills to scan various physical objects, textiles, and materials collected during the previous phases. The scanned data will be used to create detailed digital models, preserving the intricate textures and forms of the original objects.

Funded by the European Union

Training

The initial stage involves familiarising participants with the basics of 3D scanning technology. This includes understanding different types of scanners (handheld, structured light, and laser scanners) and their applications in fashion design. A focus will be done on 3D Scanner ARTEC Spider and 3D Scanner ARTEC Eva, both on the hardware part and the ARTEC software. The session will also discuss the potential applications and limitations of 3D scanning in capturing detailed geometries and textures.

3D Scanning of Human Bodies

This stage involves the application of 3D scanning techniques to capture detailed digital models of human subjects. The focus is on creating accurate digital representations of body shapes, which are essential for designing customised garments. Participants will work with the community of women engaged during the first phases, focusing on capturing detailed anatomical features and natural postures. This includes understanding the challenges of scanning live subjects, such as movement and ensuring complete data coverage, and ethical approach to capturing sensible data.

3D Scanning Exploration

Participants will use 3D scanning to enlarge their archive of visual elements that will enrich the final project design.

3D Modelling

The next step involves the use of digital modelling software to manipulate and refine the scanned data. Participants will learn to use industry-standard software, mostly Blender, to create detailed 3D models. This includes editing the geometry, adding textures, and experimenting with digital material properties. Designers will explore how digital textures can mimic physical materials or create entirely new visual effects. This stage emphasises the creative potential of digital tools, encouraging participants to experiment with form, texture, and colour in ways that are not possible with traditional methods.

3D Printing

With digital models prepared, participants will delve into the practical aspects of 3D printing. This includes understanding different types of 3D printers, materials (such as PLA, TPU, and resin), and the printing process itself. Participants will experiment with printing small objects, fabric samples, and even textile patterns directly onto fabric. This hands-on experience is crucial for understanding the possibilities and limitations of 3D printing in fashion. The focus will be on experimenting with new materials and techniques, such as flexible filaments for wearable pieces or combining printed elements with traditional textiles.

A key aspect of this phase is the exploration of materials that can be used in 3D printing and digital fashion design. This may include bio-based plastics, recycled materials, or hybrid materials. The goal is to push the boundaries of materiality in fashion, exploring how digital technologies can contribute to more sustainable and eco-friendly production methods.

Funded by the European Union

GOETHE INSTITUT

Participants will create prototypes of items, such as accessories, garment components, or entire pieces, using the skills and techniques learned. These prototypes will be evaluated and refined based on functionality, aesthetics, and wearability. This iterative process allows for continuous improvement and innovation, ensuring that the final outputs are both technically feasible and creatively compelling.

Program

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning	3D Scanning training	3D Scanning training	3D Body Scanning	3D Modelling training	3D Scanning Training	Prototyping
Afternoon	3D Scanning Exploration	3D Scanning Exploration	3D Body Scanning	3D Modelling training	Prototyping	Prototyping
Night			External Workshop		Networking Aperitivo	

Mentors

Luigi Ferretti

Over 14 years of experience in the world of communication, advertising and marketing, then 28 years in the computer industry. The last 14 he has all dedicated to industrial 3D, as an authorised and certified reseller for Italy of Artec 3D scanners, Geomagic and QuickSurface reverse engineering and quality control software, XNurbs mesh modelling software and Raplas industrial 3D printers.

Sara Antinozzi

Sara Antinozzi (Ph.D.) is a Research Fellow (RTDA) at the Department of Civil Engineering of the University of Salerno. Her research focuses on the implementation and integration of multi-scale measurement processes - with particular emphasis on sub-resolution digitizationMillimetric - infographic models and immersive technologies for the representation of heritage.

TIllverka

Tilverka is a studio based in Milan dedicated to design and sell 3D printer hardware and software, as well as support design processes based on 3D.

Funded by the European Union

Phase 4 - Design of the project

10.14.24 - 10.21.24

INPUT	OUTPUT	TRAINING OUTPUT
Projects' Moodboards	Final design of the projects	Hybrid design
Experimentation conducted during phase 2 and 3		3D printing
Visual items collected		

The fourth phase of the RAQAMA residency focuses on synthesising the knowledge, elements, insights and skills acquired in the previous phases into the creation of a cohesive project. This phase is crucial: it regards the finalisation and the design of the project, both digitally and physically, before proceeding with the production part. Therefore it involves the conceptualization, design, and initial prototyping of garments, with an emphasis on integrating traditional techniques with digital innovations. The main objective of this phase is to still experiment with materials and shapes in order to arrive at the final composition.

The approach in this phase is iterative and collaborative, encouraging participants to continuously refine their designs through feedback and experimentation. The design process will involve digital and physical techniques, utilising 3D modelling, pattern making, and traditional tailoring. The focus is on creating items that are not only aesthetically pleasing but also functional and adaptable to different bodies.

Process

Training on 3D Printing and Preparing 3D Files

This stage is dedicated to keep training on 3D printing technology, focusing on the technical aspects of preparing digital files for printing. Participants will learn how to optimise their designs for successful 3D printing, ensuring they understand the nuances of digital fabrication. Participants will learn the importance of proper file preparation, starting with the selection of appropriate file formats (such as STL and OBJ). The training will emphasise the significance of maintaining high resolution and accurate scaling, which are critical for capturing fine details in the printed models. Techniques for mesh optimization will be covered, including reducing polygon counts to streamline the printing process without sacrificing quality. Additionally, error checking will be a crucial component, where participants will use software tools to identify and correct common issues, such as non-manifold edges and inverted normals, ensuring the integrity of the digital models.

Funded by the European Union

Printing Experimentation and Review of Weaving and Digital Model Coherency

This stage focuses on keeping experimenting with 3D printing, finding the right composition and still acquiring info on how digital components work with the textile and waving samples.

The integration of traditional weaving techniques with digital models is a key focus of this phase. Participants will revisit the weaving skills acquired in earlier phases and test ways to combine them with 3D printed components. This might include embedding woven elements within printed structures or using 3D prints as a framework for further manual embellishment. The coherence of the final designs will be critically assessed, ensuring that the combination of digital and traditional elements results in a harmonious and functional collection. The review process will involve evaluating the visual and structural integrity of the garments, ensuring that the designs align with the project's overarching themes and objectives.

Finalising the 3D Design

The finalisation of the 3D designs involves meticulous refinement and optimization to prepare for production. Participants will revisit their digital models, incorporating feedback from previous reviews and their experimentation with printing. This stage emphasises the importance of precision and attention to detail, as even minor adjustments can significantly impact the print's quality and functionality. This may involve refining the model's surface finish, adjusting the fit and proportions, or optimising structural elements for better durability and flexibility. Participants will also prepare their models for final slicing, ensuring that the digital files are fully optimised for the chosen printing method. This includes setting up support structures, configuring print settings, and conducting a final check for any potential errors that could affect the printing process.

Final Review of Collection Designs: Verification of Stylistic Consistency

In the concluding stage, the focus shifts to the comprehensive review and validation of the entire collection. Participants will systematically assess each design to ensure that all pieces adhere to the project's thematic and aesthetic guidelines. The feedback provided during this session will be invaluable for final adjustments, ensuring that the collection is not only visually compelling but also meets the practical requirements of wearability and functionality.

Program

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning	Training on 3D Printing and Preparing 3D Files	Applying textures and materials to objects scanned in 3D Simulation of fit and movement. on virtual model	Printing Experimentation and Review of Weaving and Digital Model Coherency	Finalising the 3D Design	Finalising the 3D Design	Final Review of Collection Designs: Verification of Stylistic Consistency

Funded by the European Union

Afternoon	Training on 3D Printing and Preparing 3D Files	Printing Experimentation and Review of Weaving and Digital Model Coherency	Printing Experimentation and Review of Weaving and Digital Model Coherency	Finalising the 3D Design	Finalising the 3D Design	Final Review of Collection Designs: Verification of Stylistic Consistency
Night			External Workshop		Networking Aperitivo	

Mentors

Luigi Ferretti

Over 14 years of experience in the world of communication, advertising and marketing, then 28 years in the computer industry. The last 14 he has all dedicated to industrial 3D, as an authorised and certified reseller for Italy of Artec 3D scanners, Geomagic and QuickSurface reverse engineering and quality control software, XNurbs mesh modelling software and Raplas industrial 3D printers.

TIllverka

Tilverka is a studio based in Milan dedicated to design and sell 3D printer hardware and software, as well as support design processes based on 3D.

Marianna Dinuzzi

Graduated in Fashion Design at IED, during her studies she honed her manual skills working at National Opera Theatre's dressmaking. She worked as assistant product manager at Givenchy and then took the role of Product Manager for brands such as GCDS and Barrow. Together with Sara Sfregola, she founded the Evriat institute with the aim of training experts in the textile sector in southern Italy and founded Dirma, for which she is designer and weaver.

Funded by the European Union

Phase 5 - Digitalization and 3D Material Research

10.21.24 - 11.04.24

INPUT	OUTPUT	TRAINING OUTPUT
3D designed projects	Final assembly and production of the projects	Pygital textile productions
Materials Map		
Prototyped Items		

The objective of Phase 5 is to physically produce and assemble the fashion collection using both traditional textile techniques and advanced 3D printing technology. This phase aims to bring the digital designs and material explorations to life, resulting in tangible elements and fashion items that integrate various crafting methods.

The methodology involves a systematic approach to garment production, combining the use of traditional sewing machines and 3D printing technologies. Participants will use the textile laboratory in Barletta, using a range of industrial and household sewing machines alongside 3D printers. The process includes material preparation, garment assembly, quality control, and final refinement, ensuring each piece meets professional standards and design specifications.

Process

Sewing and Assembly of Garments

The central activity in Phase 5 involves the construction of garments, utilising handcraft, traditional sewing machines and advanced 3D printing technologies. This process requires a deep understanding of both the physical properties of materials and the technical capabilities of the machinery.

Sewing Techniques and Machine Utilisation

Participants will use a range of sewing machines available in the textile laboratory, including the Linear Industrial Machine Brother industries S-7200A-403, the Industrial Cut and Seam SIRUBA 747, and household machines like the Silver crest SCNM 100 A1 and Brother JX17FE. These machines are essential for various sewing tasks:

- Industrial Machines: Ideal for heavy-duty sewing, ensuring robust seams and durable garment construction. Participants will use these machines for primary stitching, including long seams and structural components.
- Household Machines: Suitable for finer details and lighter fabrics, allowing for delicate sewing tasks such as decorative stitching, buttonholes, and finishing edges. These machines provide versatility in handling different materials and techniques.

Funded by the European Union

Garment Construction

Participants will begin by assembling the garment components, starting with the basic structure and moving towards more intricate details. This includes:

- Cutting and Piecing: Cutting fabric pieces according to the digital and physical patterns developed in previous phases. Accurate cutting is crucial for ensuring that the pieces fit together seamlessly during assembly.
- Stitching and Seaming: Sewing the cut pieces together, focusing on achieving clean, straight seams. Participants will employ techniques such as French seams, overlocking, and flat-felled seams, depending on the design requirements.
- Structural Elements: Adding components like zippers, linings, and interfacing to provide structure and functionality. This step may also involve inserting 3D-printed elements designed to enhance the garment's aesthetic or structural integrity.

Integration of 3D-Printed Components

A key aspect of this phase is the integration of 3D-printed components into the garments. Participants will carefully attach these elements, ensuring they complement the fabric components both aesthetically and functionally. This integration process includes:

- Attachment Methods: Exploring various methods for attaching 3D-printed pieces to fabric, such as stitching, adhesive bonding, or using fasteners. The choice of method depends on the material properties and the design intent.
- Functional Integration: Ensuring that 3D components, such as buttons, clasps, or decorative elements, are not only securely attached but also functionally integrated into the garment. This may involve testing for durability and ease of use.

Quality Control and Refinement

Quality control is a critical component of Phase 5, ensuring that each garment meets the desired standards of craftsmanship and design. This stage involves a thorough examination of the finished garments and making any necessary refinements.

Inspection and Assessment

Participants will conduct a detailed inspection of each garment, focusing on the following aspects:

- Seam Quality: Checking for even stitching, secure seams, and absence of loose threads. Special attention is given to high-stress areas, ensuring they are reinforced and durable.
- Fit and Comfort: Evaluating the fit of the garments through try-ons or fittings with models. Participants will assess how the garments drape on the body, the ease of movement, and overall comfort. Any issues with fit, such as tightness, looseness, or misalignment, will be identified and corrected.
- Integration and Functionality: Ensuring that the integration of 3D-printed elements does not compromise the garment's functionality. This includes testing movable parts, ensuring ease of wear, and verifying the secure attachment of all components.

Funded by the European Union

GOETHE INSTITUT

Refinement and Finishing

Based on the inspection, participants will make any necessary refinements to perfect the garments. This may involve:

- Adjustments: Making minor alterations to improve fit and comfort, such as adjusting seams, hemming, or modifying closures.
- Finishing Touches: Adding final details, such as pressing garments to remove creases, attaching labels, and ensuring all fastenings work smoothly. This step also includes aesthetic refinements, such as adding decorative stitching or embellishments.

Final Documentation and Reporting

Although not a standalone activity, documenting the production process is integrated throughout Phase 5. Participants will record the steps taken, materials used, and any challenges faced, providing a comprehensive report that serves both as a record of the production process and a resource for future reference.

Program

10.21 - 10.28

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning	Sewing and Assembly of Garments	Sewing and Assembly of Garments	Sewing and Assembly of Garments	Sewing and Assembly of Garments	Sewing and Assembly of Garments	
Afternoon	Sewing and Assembly of Garments	Sewing and Assembly of Garments	Sewing and Assembly of Garments	Sewing and Assembly of Garments	Sewing and Assembly of Garments	
Night			External Workshop		Networking Aperitivo	

10.28 - 11.04

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning	Quality Control and Refinement	Quality Control and Refinement	Quality Control and Refinement	Quality Control and Refinement	Quality Control and Refinement	
Afternoon	Quality Control and Refinement	Quality Control and Refinement	Quality Control and Refinement	Quality Control and Refinement	Quality Control and Refinement	
Night			External Workshop		Networking Aperitivo	

Funded by the European Union

GOETHE INSTITUT

Mentors

Marianna Dinuzzi

Graduated in Fashion Design at IED, during her studies she honed her manual skills working at National Opera Theatre's dressmaking. She worked as assistant product manager at Givenchy and then took the role of Product Manager for brands such as GCDS and Barrow. Together with Sara Sfregola, she founded the Evriat institute with the aim of training experts in the textile sector in southern Italy and founded Dirma, for which she is designer and weaver.

Sara Sfregola

With a career in diverse fashion background, Sara transitioned from creating wedding dresses to pattern making for children's clothing companies or streetwear. In Barletta, she founded Evriat, a school where she teaches cutting, sewing, and the ancient traditions of weaving and embroidery. By sharing her extensive experience and methods, Sara contributes to the growth of technical/creative teams in various areas of the fashion system.

Funded by
the European Union

Phase 6 - Finalization and Event Realisation

11.04.24 - 11.09.24

INPUT	OUTPUT	TRAINING OUTPUT
Final Projects	Finalisation of the collection	
Materials used	Curatorial Design	
Methodology and Process		

The objective of Phase 6 is to finalise the collection, ensuring stylistic consistency and professional quality across all pieces, and to organise and execute the final presentation event. This phase aims to showcase the work developed during the residency, highlighting the integration of traditional and digital techniques.

Process

During this phase, designers and mentors will work on refining the final work and preparing the final exhibition in Bari. The collection is organised for presentation, considering the narrative flow and thematic connections between pieces.

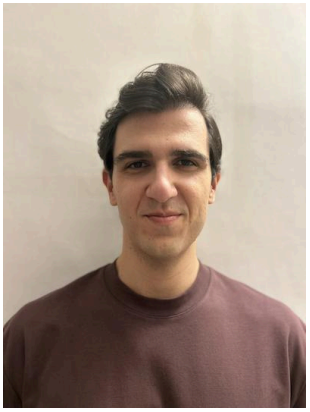
After the event in Bari, participants will reflect on the experience, gather feedback, and document the outcomes. This session consolidates the learning and achievements of the residency.

Program

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning	Final Review and Collection Organization	Final Review and Collection Organization	Final Review and Collection Organization	Final Review and Collection Organization	Public Presentation and Exhibition	Post-Event Reflection
Afternoon	Final Review and Collection Organization	Final Review and Collection Organization	Final Review and Collection Organization	Final Review and Collection Organization	Public Presentation and Exhibition	
Night					Public Presentation and Exhibition	

Funded by the European Union

Mentors



Carlo Ferretti

Graduated in Cultural Economics and Entrepreneurship at the Erasmus University of Rotterdam, Carlo Ferretti is a researcher and public value designer. He designs projects and policies to foster innovation and creative entrepreneurship for the development of territories and urban areas. He is the founder of 3DXR, a startup company for the 3D digitization of creative SMEs business. Moreover, from 2021, he is affiliated to Metalab Harvard, investigating the potentiality of technology in relation to culture and creativity.

Funded by
the European Union

Selected Designers

Amina Galal

Innovative and motivated trilingual RTW Fashion Designer proficient in the Adobe Suite, Draping, Designing and Researching. Proven ability of collection development, brand collaborations and specialized projects. Accustomed to performing in fast-paced environments with excellent time management and organizational skills. Great communicator with a deep passion for the creative process and a strong determination to perform high quality work.

Hana Zeqa

Hana works as a fashion and costume designer based in Pristina, Kosovo. My expertise spans across music, film, fashion, and costume design. I am the founder and designer at Fight or Flight Studio, and also hold a position as a fashion design professor at the University of Business and Technology in Pristina.

Marek Glow

Designer and researcher with 5 years of experience in the design industry, working with brands, agencies, and studios around the world.

Mert Oezdemir [goujirou]

Goujirou is an interdisciplinary artist working in the intersection of critical thinking in fashion, art and culture. completing his bachelor's degree in fashion and technology and participated in the fashion frontier program 2023 and ispo masterclass 2023. Currently working as brand ambassador for asics and editorial writer for moubsendotcom.

Last Designer in review.

Funded by
the European Union

Hosting Team & Contact

Carlo Ferretti

carloferretti@3dxr.eu

+39 3347441037

Marianna Dinuzzi

dinuzzimarianna@gmail.com

+39 3348561997

Paula Ferreras

paulaftt21@gmail.com

+39 3513539076

Funded by
the European Union