CURRICULUM PROFESSIONALE

INFORMAZIONI PERSONALI

Nome e Cognome	Maria Matloob
Nazionalità	Pakistana

ESPERIENZA LAVORATIVA

• Date (da – a)	01/06/2020 – 31/05/2021
• Nome e indirizzo del datore di lavoro	Gold Tree Millers, Faisalabad, Pakistan
• Tipo di azienda o settore	Grain milling/food manufacturing
• Tipo di impiego	R&D Engineer
• Principali mansioni e responsabilità	• Led product development and reformulation for a health-food company producing multigrain flours, oat and barley flakes, muesli, superfoods (moringa, chia) and speciality grain powders. • Designed and tested processing protocols to meet quality, nutritional and shelf-life targets; coordinated lab analysis across product lines. • Supported R&D activities linked to grain milling, flour blending and clean-label ingredient sourcing.

• Date (da – a)	01/06/2019 – 31/05/2020
• Nome e indirizzo del datore di lavoro	Gold Tree Millers, Faisalabad, Pakistan
• Tipo di azienda o settore	Grain milling/food manufacturing
• Tipo di impiego	Food Process Engineer
• Principali mansioni e responsabilità	• Oversaw day-to-day processing operations for grain milling, flour production and healthy-powder manufacturing. • Monitored critical control points, maintained process documentation and implemented corrective actions to reduce waste and improve yield. • Worked closely with procurement and quality teams on raw-material specifications for whole-grain and organic product lines.

• Date (da – a)	01/07/2018 – 31/08/2018
• Nome e indirizzo del datore di lavoro	Shezan (Pvt) Ltd, Lahore, Pakistan
• Tipo di azienda o settore	Food & beverage manufacturing
• Tipo di impiego	Trainee Engineer (internship)
• Principali mansioni e responsabilità	• Rotated through Tetra filling lines, pulp manufacturing, pasteurisation, pickle production, cold storage, glass-bottle packing, canning and online quality control.

	• Conducted lab analyses including pH, acidity, Brix and sulphur-content checks.
• Date (da – a)	01/09/2014 – 31/08/2015
• Nome e indirizzo del datore di lavoro	The Educators School, Faisalabad, Pakistan
• Tipo di azienda o settore	Education
• Tipo di impiego	Secondary School Head Teacher
• Principali mansioni e responsabilità	• Managed department scheduling, staff coordination and student academic development.

ISTRUZIONE E FORMAZIONE

• Date (da – a)	01/12/2022 – Current
• Nome e tipo di istituto di istruzione o formazione	University of Foggia, Italy
• Principali materie / abilità professionali oggetto dello studio	• Research focus: non-destructive quality assessment of fruit and vegetables using hyperspectral imaging (HSI) and machine learning. • Current work: HSI-based automated grape harvesting, YOLO-based grape cutting-point detection, detection of pesticide residues in table grapes, and fruit-quality prediction models with HSI.
• Qualifica conseguita	PhD in Biotechnology and Smart Practices for a Sustainable Management of Natural Resources, Food and Agriculture (in progress)
• Livello nella classificazione nazionale	Doctorate
• Date (da – a)	01/02/2024 – 31/08/2024
• Nome e tipo di istituto di istruzione o formazione	Norwegian University of Life Sciences (NMBU), Ås, Norway
• Principali materie / abilità professionali oggetto dello studio	• HSI-based quality assessment of strawberries under controlled laboratory conditions and open-field settings using drone-mounted imaging systems. • Developed and validated machine-learning models (chemometrics, deep learning) for fruit-quality prediction using Python and MATLAB. • Completed DAT-200 Applied Machine Learning coursework.
• Qualifica conseguita	Visiting PhD Researcher
• Livello nella classificazione nazionale	Doctoral research period abroad

• Date (da – a)	15/09/2020 – 21/10/2022
• Nome e tipo di istituto di istruzione o formazione	University of Agriculture, Faisalabad, Pakistan
• Principali materie / abilità professionali oggetto dello studio	• Thesis: “Value addition of quinoa (Chenopodium quinoa Willd.) using an indigenously designed saponin-removal machine.” • Designed and fabricated a stone-abrasion saponin-removal machine (hopper, grooved stone, perforated cylinder, belt-drive and motor) from mechanical calculations to physical prototype. • Optimised processing parameters (feed rate 25 g/s, milling time 135 s), achieving complete saponin removal with only 2.85% grain loss.
• Qualifica conseguita	Master of Science in Food Engineering — CGPA 3.88/4.00
• Livello nella classificazione nazionale	Laurea Magistrale (Classe LM-70)

• Date (da – a)	01/09/2015 – 18/07/2019
• Nome e tipo di istituto di istruzione o formazione	University of Agriculture, Faisalabad, Pakistan
• Principali materie / abilità professionali oggetto dello studio	• Final-year project: development and testing of a multipurpose vegetable-cutting machine. • Designed blade geometries and tested efficiency and throughput across varying VFD motor rpm settings.
• Qualifica conseguita	Bachelor of Science in Food Engineering — CGPA 3.55/4.00
• Livello nella classificazione nazionale	Laurea Triennale (Classe L-8)

CAPACITÀ E COMPETENZE PERSONALI

Madrelingua	Urdu
Altre lingue	**ENGLISH**
• Capacità di lettura	eccellente
• Capacità di scrittura	eccellente
• Capacità di espressione orale	eccellente
	ITALIAN
• Capacità di lettura	elementare
• Capacità di scrittura	elementare
• Capacità di espressione orale	elementare

CAPACITÀ E COMPETENZE ORGANIZZATIVE	• Principal Investigator on two ORIC-funded agri-processing machinery projects (quinoa polishing machine; oats dehuller),

Ad es. coordinamento e amministrazione di persone, progetti, bilanci; sul posto di lavoro, in attività di volontariato, ecc.

coordinating design, fabrication, performance testing and economic-feasibility analysis.

- Working-Group Member in five COST Actions (InsectAI, FLAVOURsome, FoodWaStop, SensorFINT) and in the University of Foggia PRA project on drone-mounted HSI, contributing to field data acquisition, processing and modelling.
- Coordinated laboratory analyses across multiple product lines as an R&D engineer; managed department scheduling and staff coordination as a secondary-school head teacher.

CAPACITÀ E COMPETENZE TECNICHE

Con computer, attrezzature specifiche, macchinari, ecc.

- Hyperspectral imaging (VIS-NIR, SWIR, FT-NIR) for non-destructive quality prediction and classification.
- Chemometrics, multivariate analysis, machine learning and deep learning; AI-based image processing (YOLO) for agricultural automation.
- Drone-mounted imaging systems for laboratory and open-field acquisition.
- Design, fabrication and testing of agricultural processing machinery; standard food-lab analyses
- **Software:** MATLAB, Python, AutoCAD, Altair EDEM, Arduino, JMP, RStudio, Minitab, Dev-C++.

ALTRE CAPACITÀ E COMPETENZE

Competenze non precedentemente indicate.

Short courses and training:

- International School of Chemometrics ISC-2025 (University of Copenhagen, Denmark), 2025.
- Introduction to Methods and Technologies for Precision Agriculture (University of Padova, Italy), 2025.
- DAT-200 Applied Machine Learning (NMBU, Norway), 2024.
- 3rd SensorFINT Training School in Spectroscopy (Poznań, Poland), 2024.

PATENTE O PATENTI

[NO]

ULTERIORI INFORMAZIONI

PUBBLICAZIONI

1. Matloob, M., Amodio, M.L., Fatchurrahman, D., Perone, C., Colelli, G. (2026). Hyperspectral Imaging for Non-Destructive Quality Prediction and Automated Harvest Decision of Table Grape. SPIE Defense + Security 2026, SPIE Paper No. 14053-57.
2. Amodio, M.L., Najafabadi, A.F., Matloob, M., Fatchurrahman, D., Colelli, G. (2026). Assessing the Quality of Packaged Cherry Tomatoes Using Two Hyperspectral Imaging Systems. SPIE Defense + Security 2026, SPIE Paper No. 14053-45.
3. Ali, M.A., Matloob, M., Raza, A., Sahar, A., & Yamin, M. (2022). Assessment of the Suitability of Solar Electricity Adoption in

Poultry Industry of Pakistan. Acta Mechanica Malaysia (AMM), 5(2), 52–57.

PROGETTI DI RICERCA

- Drone-Mounted Hyperspectral Imaging to Assess the Effect of Different Irrigation Treatments on Quality of Tomato Fruit (Bando PRA 2023, University of Foggia) — Working-Group Member (2024–2025).
- CA22129 — InsectAI: Using Image-based AI for Insect Monitoring & Conservation (COST Action) — Working-Group Member (2023–2027).
- CA22161 — Future of Plant-based Food: Bridging the Gap of New Proteins and FLAVOURsome (COST Action) — Working-Group Member (2025–2027).
- CA22134 — Sustainable Network for Agrofood Loss and Waste Prevention (FoodWaStop, COST Action) — Working-Group Member (2024–2027).
- CA19145 — European Network for Assuring Food Integrity Using Non-Destructive Spectral Sensors (SensorFINT, COST Action) — Working-Group Member (2023–2024).
- Design and Development of Oats Dehuller Machine (ORIC Funds, University of Agriculture Faisalabad) — Principal Investigator (2022).
- Design and Manufacturing of Quinoa Polishing Machine (ORIC Funds, University of Agriculture Faisalabad) — Principal Investigator (2021–2022).

COMUNICAZIONI A CONGRESSI E SEMINARI (SELEZIONE)

- Oral presentation, “Classification and Detection of Pesticide Residues in Table Grapes by Means of Hyperspectral Imaging,” AIIA 2025 International Conference — Biosystems Engineering for the Green Transition, Reggio Calabria, Italy, 21–24 September 2025.
- Poster, “The Development of a YOLOv8 Algorithm for a Real-time Model of Grape Cutting-Point Detection,” AIIA 2025, Reggio Calabria, Italy, 21–24 September 2025.
- Oral presentation, “Classification and Detection of Pesticide Residues in Table Grapes by Means of Hyperspectral Imaging,” 22nd International Conference on Near Infrared Spectroscopy, Rome, Italy, 8–12 June 2025.
- Oral presentation, “Classification and Detection of Pesticide Residues in Table Grapes by Means of Hyperspectral Imaging,” 9th National Conference of the SOI Working Group on Postharvest Management of Mediterranean Crops, Palermo, Italy, 17–19 September 2025.
- Oral presentation and poster, “Detection of Pesticide Residues in Table Grapes” and “YOLOv8 for Grape Cutting-Point Detection,” 5th International FRUTIC Symposium 2025, Rimini, Italy, 7–8 May 2025.

- Poster, “Prediction of Mulberry Fruit Quality at Different Maturity Stages Using VIS-NIR Hyperspectral Imaging,” IASIM Bilbao 2024 Conference on Spectral Imaging, Bilbao, Spain, 6–10 July 2024.
- 5th, 6th and 7th Joint Meeting of Agriculture-oriented PhD Programs (UniCT, UniFG, UniUD): Catania 2023, Lesina 2024, Udine 2025.

PREMI E RICONOSCIMENTI

- “Menzione d’onore per l’alto contenuto scientifico e metodologico del progetto presentato” — The Rotary Foundation competition “Innovazione e Futuro,” 7 June 2025.
- Best Teacher of the School, 2020.
- 1st position, science-project competition (model of volcanic eruption), 2014; Merit-based Government of Pakistan laptop scheme, 2014.
- 1st position, intra-college English speech competition, 2013; Best Speaker of the Class, 2016; 1st position in mime, Engineers’ Night, 2017.

Dichiaro di:

– essere consapevole delle conseguenze derivanti da dichiarazioni mendaci, previste dal D.P.R. 28/12/2000 n. 445 e s.m.i., e che le informazioni riportate nel presente curriculum corrispondono a verità;

– essere informato/a, ai sensi e per gli effetti di cui al Regolamento UE 2016/679, che i dati personali contenuti nel presente curriculum saranno trattati dall’Università degli Studi di Foggia per adempiere agli obblighi di pubblicazione ai fini di trasparenza previsti dalla normativa vigente.

Foggia, 22/06/2026

Maria Matloob

Firma autografa sostituita a mezzo stampa ai sensi dell’art. 3, comma 2, del D. Lgs. 39/1993.