Scientific Professional Curriculum Vitae

Emanuele Vaglio

Personal data

- Born in Gemona del Friuli (UD) on April 19th, 1988.
- E-mail: emanuele.vaglio@uniud.it

Professional titles and qualifications

- Subject Expert and Teaching Assistant (Cultore della materia) in Manufacturing Technology And Systems (ING-IND/16), appointed by the Polytechnic Department of Engineering and Architecture of the University of Udine (February 3rd, 2021- February 2nd, 2024).
- Qualification to the Industrial Engineering profession - section A, issued by the University of Udine on December 3rd 2020

Academic qualifications

- PhD in Industrial and Information Engineering obtained on March 05th, 2019 at the University of Udine.

  Thesis title: "Research on Process Parameter Optimization in Selective Laser Melting".

  Supervisor: Prof. Marco Sortino (ING-IND/16).
- Master Degree in Mechanical Engineering obtained on July 21st, 2015 at the University of Udine with the grade of 110/110.

  Thesis title: "Analysis of Fiber-Wall Interaction in Turbulent Fibrous Suspensions".

  Supervisor: Prof. Cristian Marchioli (ING-IND/06).

  Co-supervisor: Prof. Alfredo Soldati (ING-IND/06).

- Bachelor Degree in Mechanical Engineering obtained on March 28th, 2012 at the University of Udine with the grade of 103/110.

  Thesis title: "Analisi Fluidodinamica della Canalitiasi".

  Supervisor: Prof. Cristian Marchioli (ING-IND/06).

  Co-supervisor: Prof. Alfredo Soldati (ING-IND/06).

Training courses, workshops, and specialized schools

- AITeM Academy: Topics of industrial and academic research in the field of manufacturing technologies and systems. Online course, September 7th - 8th, 2020.
- Workshop: Metal Additive Manufacturing Scenario Research and Industrial Experience. International Centre for Mechanical Sciences (CISM), Udine, March 25th - 29th, 2019.
- AITeM School: Materials for Additive Manufacturing. Te.Si. Laboratory - University of Padua, Rovigo, June 26th - 29th, 2018.
- Workshop: Laser Additive Manufacturing of Metallic Materials. University of Salerno, Salerno, September 29th - 30th, 2016.

Academic career

- January 2022 - to date: Fixed time researcher art. 24, comma 3, letter a) Law 240/2010 and D.M. 10/08/2021 n. 1062 at the Polytechnic Department of Engineering and Architecture of the University of Udine. Scientific supervisor: Prof. Marco Sortino (ING-IND/16).
- April 2018 - January 2022: Holder of the Research grant ex art. 22 Law 240/2010 entitled "Optimization of the selective laser melting process for the processing of metal materials" at the Polytechnic Department of Engineering and Architecture of the University of Udine. Scientific supervisor: Prof. Marco Sortino (ING-IND/16).
- May 2020 - March 2021: Associate technologist at the National Institute of Nuclear Physics (INFN - section of TS, connected Group of Udine) as a non-INFN research fellow operating on the "FASE2 ATLAS" experiment of CERN, for the development and implementation of parts of the pixel detector cooling system. Project responsible: Prof.ssa Marina Cobal.
- February 2016 - February 2018: Holder of the Research grant ex art. 22 Law 240/2010 entitled "Application and optimization of additive technologies for metalworking" at the Polytechnic Department of Engineering and Architecture of the University of Udine. Scientific supervisor: Prof. Marco Sortino (ING-IND/16).

Other relevant professional experiences

- February 2022 - to date: Founding partner of the innovative start-up company Dynext Srl, Via Caterina Percoto 10, 33100, Udine (UD). Company purpose: development, production and marketing of innovative products or services with high technological value.
- October 2015 - December 2015: Research and Development for the digital conversion of production plants at Advantech TIME Srl, Via Pracchiuso 44, 33100, Udine (UD).

Teaching activity at University level

- March 2023 - to date: Aggregate Professor at the Polytechnic Department of Engineering and Architecture at the University of Udine for the course "Additive Manufacturing and Digital Process Innovation" (SSD ING-IND/16), master degree in Mechanical Engineering (LM-33), 6 CFU.
- April 2023: Lecturer at the Polytechnic Department of Engineering and Architecture of the University of Udine for the PhD scientific skills training course "Additive Manufacturing, metrology, and reverse engineering - Laboratories for Engineering Research", Industrial and Information Engineering PhD programme (IIE-PhD), 3:30 hours.
- March 2022 - september 2022: Adjunct professor at the Department of Engineering and Architecture of the University of Trieste for the course "Progettazione per Additive Manufacturing" (SSD ING-IND/14), master degree in Mechanical Engineering (LM-33), 6 CFU.
- March 2019 - september 2019: Adjunct professor at the Department of Engineering and Architecture of the University of Trieste, Pordenone campus, for the course "Production Planning and Control" (SSD ING-IND/16), international master degree in Production Engineering and Management (LM-31), 6 CFU.
- Integrative and laboratory teaching activities carried out within the Bachelor and Master degree courses provided by the Manufacturing Technology and Systems Research Group (ING-IND/16) of the University of Udine.
  - Manufacturing Technology I and II (ING-IND/16)
  - Innovative Manufacturing Systems (ING-IND/16)
  - Advanced Manufacturing Technology (ING-IND/16)
- Integrative and laboratory teaching activities carried out within courses provided by the Manufacturing Technology and Systems Research Group (ING-IND/16) of the University of Udine at Higher Education institutions, training and retraining institutions, private companies, master's programs, summer schools, workshops and seminars.
  - Higher Technical Institute for New Technologies Made in Italy of Udine (Curricular courses)

- Higher Technical Institute for New Technologies Made in Italy of Udine (Advanced courses)
- Higher Technical Institute for New Technologies Made in Italy of Udine (Workshop)
- Friuli Innovazione (Interreg Italia-Austria E-Edu 4.0 project, financed by EU Funds 2014-2020)
- Association of Small and Medium-sized Industries of Friuli Venezia Giulia - Confapi FVG
- ACLI National Organization for Professional Education - ENAIP
- Mechanical Engineering Cluster of Friuli Venezia Giulia - COMET
- Danieli & C. Officine Meccaniche S.p.A
- Summer school
- Master's program and specialization courses of the University of Udine
- Comprehensive State School in Tolmezzo

Thesis tutoring

Supervisor in the following Master Degree Theses:

- A. Ambrosi, Applicazione dell'Additive Manufacturing per lo sviluppo di strumenti chirurgici. University of Trieste, Master Degree in Mechanical Engineering. A.A. 2021/22. Co-supervisor: Dott. A. Varini, Prof. D. Marzullo (ING-IND/15).
- E. Billè, Ottimizzazione dei parametri di processo per la Modellazione a Deposizione Fusa di Polietere-etere-chetone. University of Trieste, Master Degree in Mechanical Engineering. A.A. 2021/22. Co-supervisor: Ing. A. Gambitta, Mag. Ing. Mech. D. Liović, Prof. A. Rondinella (ING-IND/22).
- M. Ceppi, Optimization of a cooling jacket for an electric in-hub motor of a Formula SAE car produced by SLM. University of Trieste, Master Degree in Mechanical Engineering. A.A. 2021/22. Co-supervisor: Prof. D. Marzullo (ING-IND/15).
- M. Degano, Ottimizzazione dei parametri di processo per la Fusione Laser Selettiva di polveri di carburo di tungsteno. University of Udine, Master Degree in Mechanical Engineering. A.A. 2021/22. Co-supervisor: Prof. G. Totis (ING-IND/16).

Supervisor in the following Bachelor Degree Theses:

- M. Parillaud, Sviluppi delle tecnologie a deposizione di energia diretta per applicazioni industriali innovative. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2022/23. Co-supervisor: Prof G. Totis (ING-IND/16).
- A. Pecile, Ottimizzazione delle masse non sospese in una vettura di Formula SAE. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2021/22. Co-supervisor: Prof G. Totis (ING-IND/16).

Co-supervisor in the following Master Degree Theses:

- L. Ghizzo, Realizzazione di una macchina innovativa per lavorazioni Wire Arc Additive Manufacturing. University of Udine, Master Degree in Mechanical Engineering. A.A. 2021/22. Supervisor: Prof. M. Sortino (ING-IND/16).
- G. Marini, Innovazione nel processo di stampaggio ad iniezione della plastica. University of Udine, Master Degree in Mechanical Engineering. A.A. 2021/22. Supervisor: Prof. M. Sortino (ING-IND/16).
- A. D'Huyvetter, The production time in Selective Laser Melting. Katholieke Universiteit Leuven (BE), Master of Science in Engineering Technology: Industrial engineer, Automation. A.A. 2017/18. Supervisors: Prof. A. Gasparetto (ING-IND/13), Prof. M. Sortino (ING-IND/16).
- T. De Monte, Studio sperimentale sulla qualità di componenti meccanici in lega di titanio prodotti mediante Fusione Laser Selettiva. University of Udine, Master Degree in Mechanical Engineering. A.A. 2016/17. Supervisor: Prof. G. Totis (ING-IND/16).

Co-supervisor in the following Bachelor Degree Theses:

- G. Molinaro, Riprogettazione ed ottimizzazione di un componente meccanico per la produzione mediante SLM. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2021/22. Supervisor: Prof M. Sortino (ING-IND/16).
- A. Alt, Il generative design per la manifattura additiva. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2020/21. Supervisor: Prof M. Sortino (ING-IND/16).
- G. Di Giusto, Progettazione di una piattaforma riscaldata per stampante SLM. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2020/21. Supervisor: Prof M. Sortino (ING-IND/16).
- M. Muzzolini, La manifattura additiva nella produzione delle ruote dentate. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2020/21. Supervisor: Prof M. Sortino (ING-IND/16).
- F. Milan, Produzione e caratterizzazione di un collettore di CO2 per il rilevatore a pixel dell'esperimento ATLAS. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2019/20. Supervisor: Prof M. Sortino (ING-IND/16).
- L. Rispoli, Additive Manufacturing per applicazioni sportive. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2019/20. Supervisor: Prof M. Sortino (ING-IND/16).
- N. Avon, Applicazione di strutture avanzate a componenti meccanici industriali. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2018/19. Supervisor: Prof. M. Sortino (ING-IND/16).

- G. Marini, Applicazione della Fusione Laser Selettiva per la produzione di dispositivi di scambio termico. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2018/19. Supervisor: Prof. M. Sortino (ING-IND/16).
- M. Piccoli, Design for Additive Manufacturing: metodi e strumenti. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2018/19. Supervisor: Prof.ssa B. Motyl (ING-IND/15).
- D. Comand, Progettazione di un sensore a fibra ottica prodotto mediante Additive Manufacturing per impiego nel controllo di processo di un forno elettrico ad arco. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2017/18. Supervisor: Prof. M. Sortino (ING-IND/16), Co-supervisor: Ing. Stefano Furlanetto.
- M. Gilli, Ottimizzazione dei parametri di processo per la lavorazione del Ti6Al4V su componenti ad elevata risoluzione. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2017/18. Supervisor: Prof. M. Sortino (ING-IND/16), Second Co-supervisor: Ing. T. De Monte.
- F. Bertolo, Procedure operative per l'utilizzo e la manutenzione ordinaria di una stampante SLM. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2016/17. Supervisor: Prof. M. Sortino (ING-IND/16).
- N. Gottardo, Algoritmo di preventivazione per processi di produzione innovativi. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2016/17. Supervisor: Prof. M. Sortino (ING-IND/16).
- L. Rubino, Caratterizzazione meccanica della lega AlSi10Mg lavorata per Selective Laser Melting. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2016/17. Supervisor: Prof. M. Sortino (ING-IND/16).
- T. Adriano, Tecniche Additive e Design for Additive Manufacturing. University of Udine, Bachelor Degree in Mechanical Engineering. A.A. 2015/16. Supervisor: Prof. G. Totis (ING-IND/16).
- A. Basso, Analisi del rischio in un laboratorio tecnologico innovativo. Bachelor Degree in Mechanical Engineering. A.A. 2015/16. Supervisor: Prof. M. Sortino (ING-IND/16).
- Y. Kryeziu, Analisi della procedura operativa relativa al processo di fabbricazione Laser-CUSING. Bachelor Degree in Management Engineering. A.A. 2015/16. Supervisor: Prof. G. Totis (ING-IND/16).
- D. Nespolo, Nuovi principi per la progettazione di pezzi innovativi stampati con tecnica SLM. Bachelor Degree in Mechanical Engineering. A.A. 2015/16. Supervisor: Prof. G. Totis (ING-IND/16).
- S. Bolzon, Preventivazione del costo di produzione di pezzi prodotti per stampa 3D. Bachelor Degree in Mechanical Engineering. A.A. 2014/15. Supervisor: Prof. M. Sortino (ING-IND/16), First Co-supervisor: Ing. Sandro Belfio.

- N. Croce, Additive Manufacturing: design capabilities for an optimal topology. Bachelor Degree in Mechanical Engineering. A.A. 2014/15. Supervisor: Prof. M. Sortino (ING-IND/16).

Other teaching activities

- November 2022: Teacher of a 12-hour training course on the use of additive manufacturing technologies organized by the Human Resources and General Affairs Department of the University of Udine as part of the 2022 departmental technical staff Training Programme.
- January 2020 - June 2020, January 2021 - June 2021, November 2021 - June 2022: Adjunct professor for the Additive Manufacturing course. Advanced technician for automation and mechatronic systems, Higher Technical Institute for New Technologies Made in Italy, Viale L. Da Vinci 10, 33100, Udine (UD).

Research groups

- September 2015 - to date: Participation in the research activities of the Manufacturing Technology and Systems Research Group (ING-IND/16) of the University of Udine.
- July 2019 - to date: Participation in the activities of the international research group "Pixel Endcap Mechanics" for the development of the pixel detector of the Large Hadron Collider of CERN.
- September 2020 - to date: Participation in the research activities of the international research group for the development of advanced methods to assess the elasto-plastic material behaviour using nanoindentation data. Project conducted in collaboration with the Faculty of Engineering of the University of Rijeka (HR), the Center for Micro and Nanosciences and Technologies of the University of Rijeka (HR), and the Department of Engineering of the University of Ferrara.

Indexed Scientific production

Bibliometric indicators at the date of subscription:

- 13 papers published in inernational journals.
- 2 papers published in the proceedings of international conferences.
- Total citations: 115.
- H-index: 5.

(source: SCOPUS)

Communications at conferences as a speaker

- Vaglio, E., Totis, G., Sortino, M. An innovative approach for predicting the Keyhole porosity in Selective Laser Melting. XV conference of the Italian Association of Manufacturing Technologies - AITeM, Milan, Italy, January 17th - 19th, 2022.
- Vaglio, E., De Monte, T., Lanzutti, A., Scalzo, F., Totis, G., Sortino, M., Fedrizzi, L. Preliminary investigation on mechanical properties of SS316L specimens produced by Selective Laser Melting. XIV conference of the Italian Association of Manufacturing Technologies - AITeM, Padua, Italy, September 09th - 11th, 2019.

Communications at seminars as a speaker

- Sortino, M., Vaglio, E. LAMA FVG: New research frontiers in Additive Manufacturing of metals. Invited lecture at the Department of Mechanical Engineering Design of the University of Rijeka (HR), July 05th, 2022.
- Vaglio, E., Coelli, S. 3D Printing for cooling prototypes. UK-IT ITk Integration Meeting, Virtual seminar on the development of the pixel detector of the Large Hadron Collider for the ATLAS experiment of CERN, June 23rd - 24th, 2020 (original program: March 17th - 18th, 2020, Frascati National Laboratories (RM), postponed and virtualized due to the COVID-19 pandemic). Speech carried out at the invitation of the Head of the ATLAS ITk Italia.

Communications at other meetings, workshops, seminars and courses as a speaker

- Vaglio, E. Product and process optimization in Additive Manufacturing. Workshop (10 hours) organized within the Erasmus+ programme - Staff mobility for teaching and training activities. Faculty of Mechanical Engineering and Robotics of the Akademia Gorniczo-Hutnicza University of Science and Technology of Krakow (PL), February 16th - 18th, 2023.
- Vaglio, E. La simulazione numerica del processo di Fusione Laser Selettiva. Virtual advanced AITeM training course: Software for Additive Manufacturing (SW4AM), March 11th, 2022.
- Vaglio, E. Modellazione e stampa 3D di scambiatori di calore ad alta efficienza. Virtual workshop SW4AM: Software for Additive Manufacturing, May 26th, 2021.

- Vaglio, E. Il lavoro di ricercatore in ambito tecnologico. Final plenary session of the educational project for innovation and development "Sperimentare il futuro – Industria 4.0". I.C. Tiepolo, Udine, January 27th, 2020.
- Vaglio, E. Il lavoro di ricercatore in ambito tecnologico. Final plenary session of the educational project for innovation and development "Sperimentare il futuro – Industria 4.0". Cinema David, Tolmezzo (UD), December 09th, 2019.
- Vaglio, E. L'Additive Manufacturing nella regione Alpe Adria. Meeting UNIverso - Additive Manufacturing - quando la ricerca incontra l'industria. Additive Manufacturing & Automazione: un connubio possibile? SPS Italia, Parma, May 29th, 2019.
- Vaglio, E. Programmazione del processo di stampa 3D SLM mediante Magics RP. Meeting Tecniche di avanguardia per lo sviluppo di un progetto di stampa 3D di componenti metallici. Laboratory for Advanced Mechatronics LAMA FVG, Udine, June 15th, 2018.
- Vaglio, E. Laboratorio di Additive Manuafcturing. Workshop Open Days Additive FVG. Laboratory for Advanced Mechatronics LAMA FVG, Udine, September 22nd/October 20th/November 23rd/November 28th, 2017.
- Vaglio, E. Innovazione di prodotto e processo al LAMA FVG - Ottimizzazione parametri del processo SLM e simulazione. Meeting UNIverso → Additive Manufacturing, I ricercatori UNIversitari → incontrano le aziende. TechnologyHub, Milan, April 20th, 2017.

Communications at conferences as an author

- Benasciutti, D., Pelegatti, M., De Bona, F., Lanzutti, A., Salvati, E., Sortino, M., Novak, J. S., Sordetti, F., Totis, G., Vaglio, E. Cyclic response and low-cycle fatigue strength of a Laser Powder Bed Fusion (L-PBF) additive manufactured AISI 316L steel. European Conference on Fracture - ECF23, Funchal, Madeira, Portugal, June 27th - July 01st, 2022.
- Pelegatti, M., Benasciutti, D., De Bona, F., Lanzutti, A., Salvati, E., Sortino, M., Novak, J. S., Sordetti, F., Totis, G., Vaglio, E. Low Cycle Fatigue Behaviour of an AISI 316L Stainless Steel Additively Manufactured by Laser Powder Bed Fusion (L-PBF). 9th International Conference on Low Cycle Fatigue - LCF9, Berlin, Germany, June 21st - 23rd, 2022.
- Motyl, B., Marzullo, D., Vaglio, E., Filippi, S., Scalzo, F., Totis, G., Sortino, M., Imbriani, V., Mazzone, G., You, J. H. Experiences of Additive Manufacturing for nuclear fusion applications: the case of the wishbone of the divertor of DEMO project. International Joint Conference on Mechanics, Design Engineering & Advanced Manufacturing - JCM 2022, Ischia, Italy, June 01st - 03rd, 2022.
- Rossi, C., de Mongeot, F. B., Ferrando, G., Manzato, G., Meyer, M., Parodi, L., Sgobba, S., Sortino, M., Vaglio, E. Study on properties of AISI 316L produced by Laser Powder Bed Fusion for high energy physics applications. 15th Pisa Meeting on Advanced Detectors - 15AD, Elba Island, Italy, May 22nd - 28th, 2022.

- Lanzutti, A., Andreatta, F., Magnan, M., Vaglio, E., Sortino, M., Fedrizzi, L. Evaluation of corrosion and triboccorrosion resistance of CoCrW alloy produced by SLM technology. 12th International Conference on Key Engineering Materials - ICKEM 2022, Udine, Italy, March 18th - 20th, 2022.
- Lanzutti, A., Salatin, E., Nazzi, D., Magnan, M., Sortino, M., Totis, G., Vaglio, E., Fiorese, A., Fedrizzi, L. Study on the effect of heat treatment and SLM technique temporal evolution on the microstructural and mechanical properties of additively manufactured Ti gr.5. International Conference on Processing and Manufacturing of Advanced Materials - Thermec 2021, Vienna, Austria, June 01st - 05th, 2021.
- Andreatta, F., Revilla, R. I., Lanzutti, A., Vaglio, E., Totis, G., Sortino, M., De Graeve, I., Fedrizzi, L. Corrosion behaviour of the as printed surface of 316L stainless steel manufactured by selective laser melting. European Corrosion Congress - EUROCORR 2020, virtual Congress, September 07th - 11th, 2020.
- Lanzutti, A., Andreatta, F., Magnan, M., Vaglio, E., Totis, G., Sortino, M., Fedrizzi, L. Evaluation of corrosion and tribocorrosion resistance of CoCrW alloy produced by SLM technology. European Corrosion Congress - EUROCORR 2020, virtual Congress, September 07th - 11th, 2020.
- Andreatta, F., Revilla, R. I., Lanzutti, A., Vaglio, E., Clocchiatti, L., Totis, G., Sortino, M., De Graeve, I., Fedrizzi, L. Effect of thermal treatment on microstructure and corrosion behaviour of 316L stainless steel manufactured by selective laser melting. European Corrosion Congress - EUROCORR 2019, Seville, Spain, September 09th - 13th, 2019.
- Lanzutti, A., Vaglio, E., Andreatta, F., Magnan, M., Totis, G., Sortino, M., Fedrizzi, L. Corrosion behaviour of AM 316L stainless steel. European Corrosion Congress – EUROCORR 2018, Krakow, Poland, September 09th - 13th, 2018.
- Lanzutti, A., Vaglio, E., Andreatta, F., Magnan, M., Totis, G., Sortino, M., Fedrizzi, L. High temperature tribological behaviour of AISI 316L produced by SLM technique. Metal Additive Manufacturing Conference 2018, Vienna, Austria, November 21st - 23rd, 2018.
- Lanzutti, A., Vaglio, E., Andreatta, F., Magnan, M., Totis, G., Sortino, M., Fedrizzi, L. Corrosion behaviour of AM 316L stainless steel. Metal Additive Manufacturing Conference 2018, Vienna, Austria, November 21st - 23rd, 2018.
- Sortino, M., Totis, G., Scalzo, F., Vaglio, E. Preliminary Investigation of Static and Dynamic Properties of SLM Lattice Structures for Robotic Applications. 4th IFToMM Symposium on Mechanism Design for Robotics, Udine, Italy, November 11th - 13th, 2018.

Main research and technology transfer projects

- March 2022 - to date: Preliminary study of novel components for steel plants optimized using advanced structures produced by additive manufacturing.

- September 2020 - to date: Development of advanced methods to assess the elasto-plastic material behaviour using nanoindentation data. Project conducted in collaboration with the Faculty of Engineering of the University of Rijeka (HR), the Center for Micro and Nanosciences and Technologies of the University of Rijeka (HR), and the Department of Engineering of the University of Ferrara.

- July 2019 - to date: Development, manufacturing by Selective Laser Melting and characterization of parts of the cooling system of the pixel detector of the Large Hadron Collider of CERN. Activity coordinated by the National Institute of Nuclear Physics (INFN - section of TS, connected Group of Udine) and conducted in collaboration with the International Research Group "Pixel endcap mechanics" as part of the "FASE2 ATLAS" experiment of CERN.

- September 2022 - February 2023: Characterization of the Ti6Al4V ELI alloy processed by Selective Laser Melting for use in the field of high energy physics. Activity conducted in collaboration with the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) as part of the DEMO (DEMOnstration Power Plant, nuclear fusion reactor prototype) project.

- February 2022 - March 2023: Survey on the role of additive manufacturing in the mobility sector and on the emerging skills required by companies.

- February 2022 - March 2022: Manufacturing by Selective Laser Melting of an innovative component for steel plants.

- January 2022 - March 2023: Development of the Selective Laser Melting process for processing tungsten carbide powders.

- October 2021 - December 2021: Prototyping by Selective Laser Melting of an innovative component for the distribution of food products. Project conducted in collaboration with Illycaffè S.p.A.

- August 2021 - January 2022: Prototyping the in-vessel inboard supports mock-up of the DEMO (DEMOnstration Power Plant, nuclear fusion reactor prototype) diverting device by Selective Laser Melting and milling of forged blank, in order to evaluate the suitability of the Selective Laser Melting process for the production of parts intended for use in the DEMO project. Activity conducted in collaboration with the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) as part of the DEMO (DEMOnstration Power Plant, nuclear fusion reactor prototype) project.

- May 2021 - October 2021: Consulting for designing the experiments for the study of the mechanical properties of the Ti6Al4V alloy processed by Selective Laser Melting. Activity conducted within a research project of the Faculty of Engineering of the University of Rijeka(HR).

- March 2021 - April 2021: Survey on the emerging skills required by companies and on the response capacity of the education system (post-graduate and university). Activity conducted in collaboration with Friuli Innovazione S.C.R.L. as part of the Interreg Italy-Austria E-Edu 4.0, financed by EU Funds 2014-2020.

- December 2020 - April 2021: Optimization and manufacturing of a horn antenna made from AlSi10Mg alloy by Selective Laser Melting. Activity conducted in collaboration with PicoSaTs S.R.L. as part of a project financed by the Ministry of Economic Development through the "Disegni+4" programme.

- October 2020 - July 2021: Preliminary investigation on the processability of tungsten carbide powders by Selective Laser Melting - Development of the Selective Laser Melting process for processing tungsten carbide. Project conducted in collaboration with Eurolls S.p.A.

- January 2020 - June 2021: Product and process optimization for manufacturing mechanical components by Selective Laser Melting (SLM) - Feasibility analysis of the Selective Laser Melting process, development and optimization of aesthetic and functional products, optimization of the Selective Laser Melting process for the production of complex parts, reverse engineering of mechanical components. Project conducted in collaboration with Brovedani Group S.p.A.

- December 2019 - August 2020: Development and manufacturing of geometrically advanced structures for optimizing the performance of phase change materials in heat transfer devices. Activity conducted within a research project of the Department of Industrial Engineering of the University of Padua.

- November 2019 - December 2020: Optimization of cooled inserts for aluminum die casting. Project conducted in collaboration with ZML Industries S.p.A.

- November 2018 - August 2019: Universal base knowledge library for AM - Development and characterization of geometrically advanced structures for the structural and thermo-fluid dynamic optimization of mechanical components. Project conducted in collaboration with Wartsila Italia S.p.A.

- August 2018 - May 2021: Additive FVG Square

  - Development and construction of a laboratory for metal additive manufacturing designed for collaborative use by private companies seeking to acquire hands-on experience and skills in additive manufacturing;
  - Technical training of the laboratory users;
  - Coordination and supervision of the activities carried out by laboratory users, and operational management of the laboratory;
  - Technical and scientific support to laboratory users engaged in research and experimental activities.

  Project conducted in collaboration with Friuli Innovazione S.C.R.L. and supported by own, regional, private, and of representative organizations of the manufacturing sector funds.

- April 2018 - May 2018: Manufacturing by Selective Laser Melting of an innovative component for steel plants. Project conducted in collaboration with Danieli & C. Officine Meccaniche S.p.A.

- February 2018 - March 2018: Manufacturing by Selective Laser Melting of an innovative component for steel plants. Project conducted in collaboration with SMS Group S.p.A.
- January 2018 - July 2018: Production of medical devices by laser processing - Development and manufacturing of innovative medical devices and optimization of the Selective Laser Melting process for the production of dental prostheses made from Cobalt-Chromium alloy. Project conducted in collaboration with Geass S.R.L. and financed by the FVG Region through the POR FESR 2014-2020 programme .
- October 2017 - March 2018: Characterization of the AISI 316L stainless steel processed by Selective Laser Melting for use in the field of high energy physics. Project conducted in collaboration with the National Institute of Nuclear Physics (INFN - section of GE), the Department of Physics and the Department of Chemistry and Industrial Chemistry of the University of Genoa, and the European Organization for Nuclear Research (CERN).
- February 2017 - May 2018: PORE-BONE (Optimized Design of Orthopedic Lattices and Biomaterials in Extremities) - Optimization of the Selective Laser Melting process for the production of Ti6Al4V alloy parts in the biomedical field. Project conducted in collaboration with LimaCorporate S.p.A. and financed by the FVG Region through the POR FESR 2014-2020 programme .

Other academic assignment

- December 2022 - to date: Referent for the University of Udine in the "University for Industry" Working Group of the Italian Universities Network for Sustainable Development (RUS - Rete delle Università per lo Sviluppo Sostenibile).
- January 2022 - to date: Commissioner in the CISIA OnLine orientation and evaluation Tests (TOLC) organized by the University of Udine to assess the aptitude and preparation of students enrolling in the first year of University courses.
- January 2023 - in corso: Room referent in the CISIA OnLine orientation and evaluation Tests (TOLC) organized by the University of Udine to assess the aptitude and preparation of students enrolling in the first year of University courses.
- July 2022: Delegate of the University of Udine in the final exam commission for the IFTS course "Tecniche di industrializzazione di prodotto e processo - Robotica industriale per l'impresa 4.0".

Languages

- Italian: Mother tongue.
- English: Good.

  - Reading: B1 Progressed
  - Writing: B1 Progressed
  - Speaking: B1 Progressed
  - Other certificates: English for Academic Purposes.
- German: Elementary.
  - Reading: Good
  - Writing: Good
  - Speaking: Elementary

Certifications and attestations

Certifications issued by recognized certifying organizations

- Certified qualification as Application Engineer in additive manufacturing metal. Certification issued by Bureau Veritas Italia S.p.A. in accordance with Bureau Veritas IT-IND-REG-001_ADM rule. Validity: February 06th, 2020 - February 05th, 2023.
- Certified qualification as Operator in additive manufacturing metal. Certification issued by Bureau Veritas Italia S.p.A. in accordance with Bureau Veritas IT-IND-REG-001_ADM rule. Validity: April 04th, 2019 - April 04th, 2022.

Qualifications and certifications issued by industrial suppliers of additive manufacturing technologies

Electro Optical Systems (EOS) GmbH

- Certified qualification of EOS M290 system operator. Certification issued by Electro Optical Systems (EOS) GmbH on November 08th, 2018.
- Certificate of participation in the course "Reference Point Calibration for EOS Metal Systems" (July 21st - July 22nd, 2020), provided by Electro Optical Systems (EOS) GmbH.
- Certificate of participation in the course "Advanced Supports and Orientation" (January 28th - January 29th, 2020), provided by Electro Optical Systems (EOS) GmbH.
- Certificate of participation in the course "Topology Optimization for Additive Manufacturing" (June 25th - June 26th, 2019), provided by Electro Optical Systems (EOS) GmbH.
- Certificate of participation in the course "Parameter Editor Training" (January 16th - January 17, 2019), provided by Electro Optical Systems (EOS) GmbH.
- Certificate of participation in the course "Design for AM - Metal" (December 6th - December 7th, 2018), provided by Electro Optical Systems (EOS) GmbH.

- Certificate of participation in the course "Part Screening and Selection" (November 26th - November 27th, 2018), provided by Electro Optical Systems (EOS) GmbH.
- Certificate of participation in the course "EOS-M-Safety Instruction" (November 2018), provided by Electro Optical Systems (EOS) GmbH.

Concept Laser GmbH

- Certified qualification of Concept Laser M2 Cusing system operator. Certification issued by Concept Laser GmbH on May 05th, 2016.
- Certificate of participation in the course "CL WRX Advanced training" (February 28th - March 02nd, 2017), issued by Concept Laser GmbH.

Other qualifications and certifications

- Certificate of participation in the course "LabVIEW Core 1" (December 14th - 15th, 2017), provided by National Instruments Corp.
- Certificate of participation in the course "Data Acquisition Using NI-DAQmx and LabVIEW" (December 11th - 13th, 2017), provided by National Instruments Corp.
- Certificate of participation in the course "PC-DMIS CAD+ " (August 06th - 07th, 2020), provided by Hexagon AB. Certificate issued by Hexagon AB on August 07th, 2020.
- Certificate of participation in the on-line course "UNIUD-corso base Manipolazione in Sicurezza dei Gas Puri e Gas Tecnici-02", provided by Rivoira Gas S.R.L. Certificate issued by Rivoira Gas S.R.L. on March 08th, 2019.
- Certificate of participation in the shot-peening course (November 21st, 2018), provided by Norblast S.R.L. Certificate issued by Norblast S.R.L. on November 21st, 2018.
- Certificate of participation in the course "La simulazione numerica dei processi di formatura dei metalli con Simufact" (June 01st and 08th, 2017). Certificate issued by the University of Udine on July 05th, 2017.
- Certificate of participation in the course "English for Academic Purposes" (February 16th - May 17th, 2016), provided by the Audiovisual and Linguistic Centre (C.L.A.V.) of the University of Udine. Certificate issued by the Audiovisual and Linguistic Centre (C.L.A.V.) of the University of Udine on June 08th, 2016.
- Certificate of participation in the course "Salute e sicurezza sul lavoro" according to the requirements of the State-Regions Agreement of December 21st, 2011, provided by the University of Udine. Certificate issued by the University of Udine on December 01st, 2015.
- "European Computer Driving Licence" (ECDL), issued by the I.S.I.S I. Bachmann, Tarvisio (UD) on May 24th, 2007.

Main technical competencies

- Excellent expertise in operating the Selective Laser Melting machine Concept Laser M2 Cusing and all accompanying equipment.
- Excellent expertise in operating the selective laser melting machine EOS M290 and all accompanying equipment.
- Excellent expertise in operating the Fused Deposition Modeling machine Ultimaker 2.
- Excellent expertise in operating the laser measuring system Hexagon RS5 + Romer absolute arm.
- Excellent expertise in operating the optical, confocal and interferometric Microscope Sensofar S neox five axis 3D.
- Good expertise in operating the CMM machine Hexagon Global S.
- Good expertise in operating the machining center Haas VF-2TR.
- Excellent command of SOLIDWORKS, Solidworld - CAD modeling.
- Excellent command of SOLID EDGE, Siemens - CAD modeling.
- Excellent command of Fusion360, Autodesk - CAD modeling, topology optimization, generative design.
- Excellent command of MAGICS RP, Materialise - slicing for additive manufacturing processes.
- Excellent command of NETFABB, Autodesk - slicing for additive manufacturing processes.
- Excellent command of CURA, Ultimaker - slicing for FDM processes.
- Good command of FeatureCAM - CAM programming.
- Good command of the ISO STANDARD language for programming Numerical Control machines.
- Excellent command of INSPIRE, Altair - topology optimization.
- Good command of ELEMENT, nTopology - topology optimization, generative design, lattice structures & ”architected materials”.
- Excellent command of CloudCompare, CloudCompare project - point cloud processing and mesh generation.
- Good command of PC_DMIS, Hexagon - Control of Hexagon measuring machines, point cloud processing and mesh generation.
- Good command of GOM INSPECT, GOM -point cloud processing and mesh generation.
- Moderate command of the ANSYS - multiphysics simulation.

- Excellent command of MATLAB.
- Excellent command of MICROSOFT OFFICE suite.
- Good command of GNU/Linux operating systems.
- Excellent command of the typesetting language LaTeX.

Memberships

- Ordinary member of the Italian Association of Manufacturing Technologies - AITeM.

I hereby consent to the processing of the data I provided in this CV. I declare my agreement with the data protection regulations in the data privacy statement.

Udine, April 28th, 2023

Signature