Andrea Petruccioli

WORK EXPERIENCE

18/07/2022 – CURRENT – Soliera, Italy
VEHICLE ENGINEER – WI-EN ENGINEERING

01/11/2018 – 31/01/2022
PHD SCHOLAR AT DIEF UNIMORE – ALMA MATER STUDIORUM - UNIVERSITÀ DI BOLOGNA

Automotive for intelligent mobility
Automotive for a smart mobility - Vehicle Design, Manufacturing and Systems Integration curriculum
Research project: "Development of a Computer-Based methodology for tolerance selection and optimization applied to the automotive sector"
Research field: Product Design, Dimensional Management, Tolerance Analysis, Design for tolerancing, Design to Cost, Multi-Disciplinary Optimization on automotive components

Bologna, Italy

16/11/2021 – 16/07/2022 – Modena, Italy
RESEARCH FELLOW AT DIEF UNIMORE – UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Vehicle Engineer
Research project: "Studio, sviluppo ed applicazione di metodi computer-based per l'integrazione di aspetti funzionali ed estetici per il settore automotive"

16/11/2020 – 15/11/2021 – Modena, Italy
RESEARCH FELLOW AT DIEF UNIMORE – UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Vehicle Engineer
Research project: "Studio e progettazione dell'integrazione nel layout del veicolo di un sistema di supporto alla guida per il rilevamento di ostacoli e relativa definizione dei segnali di avviso al conducente", for the project "Connected Electric Modular Powertrain - CEMP" - REGIONE LOMBARDIA – "POR-FESR 2014-2020 - Call HUB Ricerca e Innovazione"

01/11/2019 – 31/10/2020
RESEARCH FELLOW AT DIEF UNIMORE – UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Vehicle Engineer

Research project: "Studio, sviluppo ed applicazione di metodi computer-based per l'integrazione di aspetti funzionali ed estetici per il settore automotive"

Modena, Italy

01/11/2018 – 31/10/2019

RESEARCH FELLOW AT DIEF UNIMORE – UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Vehicle Engineer

Research project: "Studio, sviluppo ed applicazione di metodi computer-based per l'integrazione di aspetti funzionali ed estetici per il settore automotive"

Modena, Italy

2018 – CURRENT

SCIENTIFIC PUBLICATION

- Petruccioli A., Pini F., & Leali F. 2022. Development of a Computer-Aided integrated method for the tolerance-cost multi-disciplinary optimization of an automotive engine. International Journal on Interactive Design and Manufacturing (IJIDeM), 1-13.
- Dalpadulo E., Petruccioli A., Pini F., & Leali F. (2022). Synergic product and process design for additive fabrication of lightweight vehicles (No. 2022-37-0028). SAE Technical Paper.
- Petruccioli, A., Gherardini F., & Leali F. (2022). Assessment of close-range photogrammetry for the low cost development of 3D models of car bodywork components. International Journal on Interactive Design and Manufacturing (IJIDeM), 1-11.
- Petruccioli A., Pini F., & Leali F. 2021. Tolerance specification model for systematic application of GD&T in product design. Presented at the IMECE 2021 International Conference (November 2021).
- Petruccioli A., Pini F., & Leali F. 2021. Model-based approach for optimal allocation of GD&T. Presented at the ADM 2021 International Conference (September 2021).
- Petruccioli A., Gherardini F., Panari D., & Leali F. 2021. Computer-Aided Tolerancing analysis of a high-performance car engine assembly. In: Roucoules L., Paredes M., Eynard B., Morer Camo P., Rizzi C. (eds) Advances on Mechanics, Design Engineering and Manufacturing III. JCM 2020. Lect. Notes Mech. Eng. Springer, Cham.
- Gherardini, F., Petruccioli, A., Dalpadulo, E., Bettelli, V., Mascia, M. T., & Leali, F. 2020. A Methodological Approach for the Design of Inclusive Assistive Devices by Integrating Co-design and Additive Manufacturing Technologies. In International Conference on Intelligent Human Systems Integration (pp. 816-822). Springer, Cham.
- Vergnano, A., Gherardini, F., Petruccioli, A., Bonazzi, E., & Leali, F. 2019. Robust Parameter Analysis of Compliant Part Models for Computer Aided Tolerancing. In International Conference on Design, Simulation, Manufacturing: The Innovation Exchange (pp. 241-254). Springer, Cham.

01/11/2018 – CURRENT

TEACHING AND EDUCATIONAL ACTIVITIES

Teaching activities

- Teaching assistant of engineering courses for the Vehicle Engineer degree (a.a. 2018/2019, a.a. 2019/2020), for the Vehicle Engineer master degree (a.a. 2018/2019, a.a. 2019/2020, a.a. 2020/2021, a.a. 2021/2022), for the Advanced Automotive Engineering master degree (a.a. 2018/2019, a.a. 2019/2020, a.a. 2020/2021, a.a. 2021/2022), DIEF UNIMORE, Modena:

- Disegno tecnico industriale
- Design Methods
- Automotive Computer-Aided Design
- Vehicle Conceptual Design
- Costruzioni Automobilistiche

- Teaching for the module "Automotive basics - Vehicle Layout" at "MUNER Higher Education School in future of automotive for intelligent mobility", DIEF UNIMORE, Modena, 15/11/2021.

- Teaching of the engineering courses for the ITS course "Tecnico superiore industria 4.0 per l'innovazione della produzione di medical device", for the ITS course "Tecnico superiore per la produzione di apparecchi e dispositivi biomedicali", ITS Biomedicale, Mirandola (MO), 2019-2021-2022

- Teaching of engineering lectures for the courses "Introduzione al restauro di veicoli d'epoca e di interesse storico", "Tecnico restauratore di carrozzeria d'auto d'epoca", "Tecnico restauratore della meccanica dell'auto d'epoca", CNI Ecipar, DIEF UNIMORE, Modena, 2019-2021-2022

- Teaching for the module "Introduction and basics of mechanics – Vehicle Architecture" for the Master "ADBoT – Autonomous Driving and enabling Technologies" (2018-2019), UNITN, Trento, 21/05/2019

01/10/2018 – 01/11/2018

INTERNSHIP AT DIEF UNIMORE – UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

3D Modelling Additive Manufacturing Engineer

Collaboration in Codesign project "3DPrint2Enable - development of custom codesigned aids to overcome dif ficulties using hands", Dipartimento di Ingegneria Enzo Ferrari e Dipartimento di Scienze Mediche e Chirurgiche Materno Infantili e dell'Adulto, Unimore: solid and customizable parametric component surfaces 3D CAD modeling to be realized through additive manufacturing technology

Modena, Italy

15/02/2018 – 25/06/2018

TRAINERSHIP AT MODELLERIA MODENESE SRL – VIA DELLA TECNICA, 20, 41122

Project and the 3D modeling of a sports car concept with a Retractable Hard Top mechanism, design of the prototype and production of the scale model

Modena, Italy

EDUCATION AND TRAINING

12/2018

PASSED THE GOVERNMENT EXAM AND LICENSED AS A PROFESSION ENGINEER

09/2015 – 07/2018 – Modena, Italy

MASTER'S DEGREE: AUTOMOTIVE ENGINEERING (LM-33), VOTE 110/110 CUM LAUDE, 17/07/2018 – UNIMORE: ENZO FERRARI Department (DIEF)

***Master thesis*: Project and 3D modeling of a concept car vehicle with a Retractable Hard Top mechanism, and design of the prototype**
Mechanical design: Power up for car engine, this project was part of engine structural course
Design methods: Engineering of a car dashboard module, with a focus on tolerance design
Participation to Formula Student: Aerodynamics team
Architectural car layouts definition: Project of car platform in collaboration with Ferrari engineers
Attending automotive courses, seminars and conferences

09/2012 – 09/2015 – Perugia, Italy

BACHELOR'S DEGREE: MECHANICAL ENGINEERING (L-9), VOTE 107/110, 24/09/2018 – UNIPG: Engineering Department

***Bachelor's thesis* : Project of a gearmotor with complete sizing and structural verifications**
Participation of Formula Student: Aerodynamics team

09/2007 – 07/2012 – Viterbo, Italy

CLASSICAL MATURITY, VOTE 100 CUM LAUDE/100 – Liceo Classico Mariano Buratti

LANGUAGE SKILLS

Mother tongue(s): **ITALIANO**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2
SPANISH	A2	A2	A1	A1	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

ORGANISATIONAL SKILLS

Organisational skills and field of interest

Good organisational skills gained during research projects, master thesis, project works

Engineering:
Dimensional Management, Tolerance Analysis, Design for tolerancing, Design to Cost on automotive components

Field of main interest
- Vehicle architecture
- Parametric 3D CAD and CAS software, 3D surface modeling
- Automotive design (platform and layout design, ergonomics, HMI)
- Classic vehicles (Classic vehicle restoration and certification)
- Sportcars and luxury vehicles
- Car testing and reviews
- Efficient and green mobility, Hybrid and Electric vehicles

ENGINEERING SKILLS

Engineering software skills

Advanced user of Engineering software
- Computer-Aided Design: Solidworks, CATIAV5, CATIAV6 (3DExperience Platform) - Dassault Systèmes®; Creo Parametric 4.0 - PTC©
- Computer-Aided Tolerancing: Cetol 6σ© - Sigmetrix, LLC
- Computer-Aided Cost Estimating / Cost Manufacturing: aPriori - aPriori©
- Multi-Disciplinary Optimization Platform: ModeFrontier - Esteco©
- Engineering Platform: 3DExperience Platform - Dassault Systèmes®
- 3D Inspection and Metrology: Geomagic Control X - 3D Systems, Inc.

Additional software skills:
- Parametric surface modelling
- Free form surface modelling

Proficient user of:
- Additive Manufacturing: Cura - Ultimaker®
- Photgrammetic software: Metashape - Agisoft©; ReCap Photo - Autodesk®

Basic user of:
- Python

- Maxima, MATLAB;
- Aerodynamics, fluid-dynamics simulation: Star ccm+; Star-CD; ES-ICE
- FEM: MARC-MENTAT