

**EUROPEAN  
CURRICULUM VITAE  
FORMAT**



**PERSONAL INFORMATION**

Name  
Address  
Telephone  
E-mail  
Nationality  
Date of birth

**SHETHIA FENIL PANALAL**  
**VIA DELLA PIETRA, 6, 40132, BOLOGNA, ITALY**  
**+ 39 351 8939094 (Mobile)**  
[fenilpanalal.shethi2@unibo.it](mailto:fenilpanalal.shethi2@unibo.it)  
**INDIAN**  
**31/08/1990**

**WORK EXPERIENCE**

- May 2022 to October 2022

**Winner of the scholarship (Borsa Di Formazione, Protocol Number 1168 of date 26/04/2022) for the topic: Models and control algorithms based on artificial intelligence and machine learning for the reduction of CO2 emissions in high-performance engines**

- Name and address of employer
- Main activities and responsibilities

Department of Industrial Engineering, Alma Mater Studiorum – University of Bologna, Bologna Italy

- Engine installation and conduction of test at the test bench
- Development of 0-D combustion models based on Artificial Intelligence
- Validation of models by comparing the results with experimental data
- Data analysis of the recorded data at the engine test cell using Matlab/Simulink

- October 2021 to April 2022

**Internship**

- Name and address of employer
- Main activities and responsibilities

Engine Test Cell, Department of Industrial Engineering, Alma Mater Studiorum – University of Bologna, Via Terracini, 40131, Bologna.

- Engine installation and conduction of test at the test bench
- Development of 0-D combustion models based on Artificial Neural Networks
- Developed a user-developed Matlab GUI to automatically train and test the Neural Networks
- Development of ANN-based, engine simulator
- Validation of the models and simulator by comparing the results with experimental data
- Data analysis of the recorded data at the engine test cell using Matlab/Simulink

- July 2015 to May 2019

**Design Engineer**

- Name and address of employer
- Main activities and responsibilities

Eros Elevators, 405 Bharat Industrial Estate, Sewri, Mumbai, 400015

- Modelling and FEA simulation of mechanical components
- 2D drawings for manufacturing

- September 2013 to July 2015

**Cadd Engineer**

- Name and address of employer
- Main activities and responsibilities

Cadd Center, A-306, Om Rachna, Sector-17, Vashi, Navi Mumbai, 400703

- Instructor on CAD software (Solidworks, Catia, Ansys, AutoCAD)
- 3D Modelling of components for outsourced projects

- July 2010 to September 2010

**Short Internship**

- Name and address of employer
- Main activities and responsibilities

Swastik Auto Works, S.K. Bole Road, Prabhadevi, Mumbai 400028

- Assisting in maintenance of passenger cars

- December 2009 to May 2010 & June 2008 to November 2008
- Name and address of employer
- Main activities and responsibilities

### Internship (Sandwich Trainee)

TATA Motors Limited, Sector 15, MIDC, Pimpri Colony, Pimpri-Chinchwad, Pune, 411018

- Development of a function in a control system for automotive application
- Developing and simulating control circuits for automotive application in software environment
- Carried out mechanical assembly of a study 1.4L, inline 4-cylinder petrol engine

## EDUCATION AND TRAINING

- November 2022 to Present
- Name of organization
  - Topic
- Title of qualification
- September 2019 to April 2022
- Name of organization
  - Thesis
- Title of qualification awarded
- September 2010 to June 2019
- Name of organization
  - Thesis
- Title of qualification awarded
- August 2006 to July 2010
- Name of organization
  - Thesis
- Title of qualification awarded
- November 2020 to December 2022

### Automotive Engineering for Intelligent Mobility, Curriculum 2: Energy Systems, Powertrains, Vehicle Performance

Alma Mater Studiorum - University of Bologna  
 Analysis and Advanced Modelling of Phenomenon and Technologies Related to the Implementation of New Propulsion Systems and Fuels to Reduce CO<sub>2</sub> Emissions  
 Doctor of Philosophy (PhD)

### Advanced Automotive Engineering – Advanced Powertrains, Bologna

Motorvehicle University of Emilia Romagna (MUNER)  
 Master Thesis Title: “Development and validation of an artificial intelligence-based, control-oriented simulator of a high-performance spark ignition engine”.  
 Master’s Degree in Advanced Automotive Engineering (Final Grade: 107/110)

### Mechanical Engineering

K. J. Somaiya College of Engineering (Mumbai University)  
 Bachelor Thesis Title: “Study of design of airplane wings”.  
 Bachelor of Engineering in Mechanical Engineering (Final Grade, 7<sup>th</sup>, and 8<sup>th</sup> Semester: 973/1500, First Class, 84.2/110 in Italian Grade)

### Mechanical Engineering

Agnel Polytechnic, Vashi (Maharashtra State Board of Technical Education)  
 Diploma Thesis Title: “Design and fabrication of windmill (microgeneration)”.  
 Diploma in Mechanical Engineering (Final Grade, 7<sup>th</sup>, and 8<sup>th</sup> Semester: 875/1025, First (distinction) Class, 99.3/110 in Italian Grade)

### Training and Seminars

- **Short course**, Alma Mater Studiorum - University of Bologna and KTH Engineering Mechanics, Topic: “Uncertainty Analysis for Engineers”. By Prof. Henrik Alfredsson, Location: Online Lesson, Date: 13/02/2023 to 15/02/2023, Duration: 10 hours.
- **Short course @ Engine Test Cell**, Department of Industrial Engineering, Alma Mater Studiorum - University of Bologna, Topic: “An Overview of a Model-Based Combustion Control Algorithm and its implementation in a Rapid Control Prototyping System Designed for the Engine Test Bench”. By Dott. Ing. Alessandro Brusa. Location: Engine Test Cell, Via Umberto Terracini 24/26, 40131, Bologna, Date: 15/12/2022 & 21/12/2022, Duration: 8 hours.
- **Short course**, Alma Mater Studiorum - University of Bologna and KTH Mekanik, Topic: “Short Course on Data Driven Methods in Engineering (Part 2)”. By Prof. Ricardo Vinuesa, Location: Online Lesson, Date: 29/11/2022 to 12/12/2022, Duration: 12 hours.
- **Muner Winter School**, MUNER Higher Education, Topic: “Future of Automotive for Intelligent Mobility”, Location: Online School, Date: 17/11/2022 to 07/12/2022, Duration: 90 hours.

## EXTRA-CURRICULAR ACTIVITIES

- February 2020 to Present
- Name of organization
  - Main activities
- March 2020 and March 2022
- Name of organization
  - Main activities
- January 2015 to January 2019
- Name of organization
  - Main activities
- August 2011 to August 2013
- Name of organization
  - Main activities

## PUBLICATIONS

- Description

## MOTHER TONGUE

- **Online Training**, Gamma Technologies, Topic: "GT-Suite Introduction Training", Location: Online, Date: 06/12/2021 to 07/12/2021, Duration: 9 hours.
- **Online Training**, Gamma Technologies, Topic: "GT-Suite Exhaust Aftertreatment Training", Location: Online, Date: 09/12/2021 to 10/12/2021, Duration: 16 hours.
- **Safety Training**, Alma Mater Studiorum - University of Bologna, Topic: "Module 1: Safety General Training", Location: Online, Date: 20/11/2020, Duration: 4 hours.
- **Safety Training**, Alma Mater Studiorum - University of Bologna, Topic: "Module 2: Safety Specific Training (Part 1)", Location: Online, Date: 20/11/2020, Duration: 4 hours.

### Powertrain Engineer

Unibo Motorsports Formula SAE Combustion Team, Bologna, Italy

- Energy consumption analysis for a preliminary concept of hybrid powertrain
- Developed a model for fuel film compensation using Matlab/Simulink
- Data analysis
- Technician

### Tutor - Part Time

Alma Mater Studiorum – University of Bologna

Supporting/assisting the professors in the blended mode of teaching

### Technical Inspector

Formula Bharat (Indian Formula SAE Race), India

- Technical Inspector
- Document Reviewer

### Powertrain Manager and Team Member

Orion Racing India, Formula SAE Combustion Team, Mumbai, India

- Engine calibration using Motec M400 ECU
- Data analysis
- Technician

Author and Presenter at international conferences, for the following papers:

- Technical Papers
  - Shethia, F., P., Mecagni, J., Brusa, A., Cavina, N., "Development and Software-in-the-Loop Validation of an Artificial Neural Network-Based Engine Simulator", SAE Technical Paper 2022-24-0029, 2022, <https://doi.org/10.4271/2022-24-0029> at SAE International CSM 2022: 22CSM-0036.
- Journal Papers
  - Shethia, F., P., Mecagni, J., Brusa, A., Cavina, N., "Advanced, Guided Procedure for the Calibration and Generalization of Neural Network-based Models of Combustion and Knock Indexes". Manuscript ID: IJER-23-0071, submitted to International Journal of Engine Research for review.

## Gujarati

## OTHER LANGUAGES

- Reading skills
- Writing skills
- Reading skills

### English

Proficient (C1)  
Proficient (C1)  
Proficient (C1)

### Italian

- Reading skills
  - Writing skills
  - Reading skills
- Advanced Beginner (A2.2)  
Advanced Beginner (A2.2)  
Advanced Beginner (A2.2)

### Marathi

- Reading skills
  - Writing skills
  - Reading skills
- Proficient  
Competent  
Proficient

### Hindi

- Reading skills
  - Writing skills
  - Reading skills
- Proficient  
Competent  
Proficient

## TECHNICAL SKILLS AND COMPETENCES

- Computer Skills

### Applications

- Matlab/Simulink → Expert
- OBI Indicating System → Advance Beginner
- GT Power → Advance Beginner
- INCA → Proficient
- Solidworks → Expert
- PTC Creo → Proficient
- NX Cad → Proficient
- Catia → Proficient
- Ansys → Proficient
- AutoCAD → Proficient
- Microsoft Office → Proficient

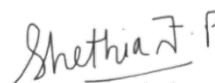
## OTHER SKILLS AND COMPETENCIES

- Basketball
- Reading

## REFERENCE

- Name and title
  - E-mail
  - Telephone

Vinay Parab, P. Eng., MSc Mechanical Engineer  
[vparabmech@gmail.com](mailto:vparabmech@gmail.com)  
+1 306 530 5119



Fenil Panalal Shethia

BOLOGNA, 06/03/2023

## DICHIARAZIONI SOSTITUTIVE DI CERTIFICAZIONI

(art. 46 D.P.R. n. 445/00)

## DICHIARAZIONI SOSTITUTIVE DELL'ATTO DI NOTORIETA'

(art. 47 D.P.R. n. 445/00)

Il sottoscritto Shethia Fenil Panalal, C.F. SHTFLP90M31Z222G, nato a Mumbai, India il 31/08/1990 e residente in Via Della Pietra, sesso maschile, a tal fine e consapevole delle sanzioni penali, nel caso di dichiarazioni non veritiere, di formazione o uso di atti falsi, richiamate dall'art. 76 del D.P.R. 445 del 28 dicembre 2000

### DICHIARA

che i dati anagrafici, gli stati, qualità personali, informazioni e titoli contenuti e dettagliati nel presente Curriculum sono corrispondenti al vero e di essere in possesso di tutti i titoli in esso riportati.



Bologna, 06 Marzo 2023

Fenil Panalal Shethia

La presente dichiarazione non necessita dell'autenticazione della firma se, ai sensi dell'art. 38, D.P.R. 445/00, è sottoscritta ed inviata insieme alla fotocopia, non autenticata di un documento di identità del dichiarante, all'ufficio competente.