Shreyas Girish

Traverssera de Les Corts 138, Barcelona 08028
LinkedIn

Email: shreyasgirish30@gmail.com
Mobile: +34 641 924 789

Education

- **Universität Politècnica de Catalunya** — Barcelona, Spain
  Master of Numerical Methods in Engineering — *Sept 2022 - May 2025*
  Courses: *Advanced Fluid Mechanics, HPC, Machine Learning, Artificial Intelligence, Structural Dynamics, Parametric Model Order Reduction(PMOR)*

- **JSS Academy of Technical Education** — Bangalore, India
  Bachelor of Engineering - Mechanical Engineering — *Aug 2015 - June 2019*
  Courses: *Fluid Dynamics, FEA, Thermodynamics, Heat Transfer, Turbo Machinery*

Skills Summary

- **Modeling**: CATIA, Solidworks, Spaceclaim, HyperMesh, AutoCAD
- **CAE Tools**: ANSYS, Star-CCM+, Abaqus, OpenFoam, Fluent, Workbench
- **Programming Languages**: Python, C++, MATLAB, TCL/TK
- **Languages**: **Native/ Bilingual Proficiency** - English, **Limited Proficiency** - Spanish, German
- **Soft Skills**: Leadership, Task Management, Writing, Public Speaking, Time Management

Work Experience

- **Mekano4** — March 2025 - May 2025
  Intern
  - **Bridge Component Simulation:**: Executed nonlinear structural simulations using ANSYS to assess the behavior of post-tensioned systems, incorporating geometric and material nonlinearity for critical bridge elements.
  - **Contact & Convergence Modeling:**: Developed and refined models with complex contact interactions (wedge–anchor–cable interfaces), implementing advanced solver strategies to ensure accurate convergence and displacement control.

- **CSolar.es** — Oct 2024 - Dec 2024
  Intern
  - **Solar Panel CFD Analysis**: Conducted comprehensive CFD simulations to analyze airflow performance over solar panels, optimizing efficiency and durability.
  - **Structural Simulation Expertise**: Performed advanced structural analyses using Abaqus to evaluate and enhance the structural integrity of solar panel systems.
  - **Industry Presentation**: Presented key findings and technical insights at an ANSYS event, demonstrating expertise in simulation methodologies and their real-world applications.

- **Faurecia Clean Mobility** — June 2022 - Sep 2022
  Senior CFD Engineer - Full Time
  - **Exhaust System Optimization**: Led team to improve exhaust system simulation efficiency using CAE tools and advanced programming.
  - **Parametric & Comparative Analysis**: Performed parametric studies and comparative analysis to enhance simulation accuracy and insights.
  - **Multidisciplinary Collaboration**: Scoped projects with field engineers, delivering professional services while ensuring high-quality client support.

- **Copes Tech India Pvt. Ltd** — Jan 2020 - May 2022
  CFD Analyst - Full Time
  - **CFD & Thermal Analysis**: Conducted fluid flow and thermal CFD analysis of engine exhaust systems, with Star-CCM+ and Hypermesh.
  - **Simulation Optimization**: Led geometry optimization, mesh modeling, and structural dynamics simulations.
  - **Advanced Simulation Tools**: Utilized Star-CCM+, Hypermesh, and Ansys to develop comprehensive solutions, optimize designs, and enhance functionality and efficiency.

- **Copes Tech India Pvt. Ltd** — Jul 2019 - Jan 2020
  CFD Engineer - Full Time
  - **Advanced CFD Simulation**: Executed 30+ 1D, 2D, and 3D simulations, showcasing expertise in fluid flow and thermal analysis with high accuracy and efficiency.
  - **Technical Proficiency**: Demonstrated advanced skills in modeling, meshing, and simulation optimization using tools like Star-CCM+, Hypermesh, and Ansys.

- **BHEL-EDN** Nov 2018 - Dec 2018
  Intern
  - **Cold Plate Design & Testing**: Designed and rigorously tested a cold plate for traction applications, showcasing innovation and practical problem-solving capabilities.
  - **Advanced Modeling**: Created a detailed SolidWorks model to support comprehensive analysis and enhance traction system performance.
  - **Thermal Management Expertise**: Applied engineering principles to optimize cold plate design, ensuring efficient heat dissipation and reliability in traction systems.
- **Triveni Engineering & Industries Limited** Jul 2018 - Aug 2018
  Intern
  - **Gear Manufacturing Expertise**: Gained hands-on experience in the complete gear manufacturing process, including raw material selection, production, and testing, with a focus on practical engineering applications.

Projects

- **Development of a Machine Learning Tool for Fake News Detection (Oct 2023 - Dec 2023)** *Tools: Python, Scikit-learn, Logistic Regression, Random Forest, Gradient Boosting*
  - **Implemented TF-IDF for Feature Extraction** - Preprocessed and transformed raw text data into numerical form using TF-IDF to capture word importance across documents.
  - **Built Machine Learning Models** - Trained models like Logistic Regression and Random Forest to classify news articles, selecting Random Forest for its superior accuracy.
  - **Improved Model Robustness and Accuracy** - Conducted hyperparameter tuning and cross-validation, achieving 85% accuracy and reducing model overfitting on test data.
  - **Deployed Solution for Real-World Use** - Deployed the trained model to classify news articles in real time, providing a robust and scalable fake news detection tool.
- **Reduced Order Modeling for Nonlinear Structural Dynamics (Jan 2025 – May 2025)** *Tools: Python, NumPy, SciPy, SVD, Operator Inference, Newmark Method, Kratos Multiphysics*
  - **Developed Non-Intrusive Reduced Order Models (ROM)** – Implemented a data-driven ROM using Operator Inference and Proper Orthogonal Decomposition (POD) to reduce computational cost in structural dynamics simulations.
  - **Simulated Cantilever Beam Dynamics** – Performed full-order simulations in KratosMultiphysics and solved reduced models using Newmark-β with Newton-Raphson iteration for nonlinear systems.
  - **Validated ROM Accuracy** – Evaluated model performance by comparing displacement, velocity, and acceleration results with high-fidelity full-order models, achieving over 98% dimensionality reduction.
- **Simulation of Turbulent Flow Through a Pipe (Jan 2022 - Mar 2022)** *Tools: MATLAB, OpenFOAM, Python, k-epsilon/k-omega Models*
  - **Conducted CFD Simulations in OpenFOAM** - Simulated turbulent flow in a circular pipe using Reynolds-Averaged Navier-Stokes (RANS) equations to predict flow behavior.
  - **Automated Mesh Generation** - Created efficient meshes with automated tools, improving simulation accuracy and computational efficiency.
  - **Validated Turbulence Models** - Compared k-epsilon and k-omega models against theoretical velocity profiles to evaluate their performance for internal flow predictions.
- **Simulation of Supersonic Flow in Nozzles (Sep 2021 - Nov 2021)** *Tools: MATLAB, MacCormack Method, Compressible Flow Analysis*
  - **Developed Solver for Compressible Flow** - Implemented the MacCormack method to solve compressible Navier-Stokes equations for supersonic flow in convergent-divergent nozzles.
  - **Analyzed Shock Wave Formation** - Simulated shock waves and expansion fans occurring within the nozzle due to pressure and Mach number variations.
  - **Validated Numerical Results** - Compared simulation results with isentropic flow theory, ensuring solver accuracy and highlighting flow behavior under supersonic conditions.

Publications

- **A Literature Study on Automobile Fuel/Propulsion System Technologies**: Published on: 31 July 2017. ISSN: 2320-5547
- **A Literature Survey on Automobile fuel system technologies**: Published on: 31 July 2017. ISSN: 2320-5547
- **National Conference on Emerging Trends in Material, Design, and Manufacturing (NCMDM- 2019)**: Characterization of E Glass Fiber reinforced with Aluminum 8176 metal matrix composite, B.E. Project

Barcelona, 4 de junio de 2025

A quien corresponda:

Por la presente, deseo recomendar al Sr. **Shreyas Girish**, quien ha realizado una estancia de prácticas en el Departamento de I+D de nuestra empresa, **MK4 World Wide**, especializada en sistemas de postesado para la edificación.

Durante su estancia, el Sr. Girish ha demostrado una excelente predisposición al trabajo, una actitud proactiva y una gran capacidad de adaptación. Se ha integrado rápidamente en nuestro equipo, participando activamente en las tareas asignadas y mostrando siempre una actitud colaborativa. Su formación en el ámbito de los métodos numéricos ha resultado de gran utilidad para algunos de los proyectos en desarrollo.

Uno de los aspectos destacables ha sido su disposición para aprender y su actitud respetuosa, tanto con sus compañeros como con los procedimientos de la empresa. Aunque su nivel de español aún está en proceso de mejora, ha demostrado interés y esfuerzo por comunicarse de manera efectiva, lo que ha contribuido positivamente a su integración.

En resumen, considero que el Sr. Girish posee un perfil prometedor y valioso para futuros equipos técnicos o académicos, especialmente en entornos internacionales y multidisciplinares.

Atentamente,
Mariela Cordero
Directora del Departamento de I+D
MK4 World Wide

Barcelona, June 4, 2025

To whom it may concern,

I am pleased to write this letter of recommendation for **Mr. Shreyas Girish**, who completed an internship in the R&D Department of our company, **MK4 World Wide**, which specializes in post-tensioning systems for buildings.

During his time with us, Mr. Girish consistently demonstrated a positive attitude, willingness to learn, and strong teamwork skills. He quickly integrated into our team, actively participating in the assigned tasks and maintaining a collaborative and respectful approach. His academic background in numerical methods was particularly beneficial to some of our ongoing projects.

One of his strengths was his openness to feedback and his professional conduct within the work environment. Although his command of Spanish is still improving, he made a commendable effort to communicate effectively, which greatly supported his integration into the team.

In conclusion, I believe Mr. Girish has a promising profile and would be a valuable addition to any technical or academic team, especially in international and multidisciplinary settings.

Sincerely,
Mariela Cordero
R&D Department Director
MK4 World Wide

CSolar Estructuras S.L.
CIF: B-65579393
C/ Molí d'en Xec, Nave 2
08291 Ripollet, Barcelona
Teléfonos: +34 935 272 760
info@c-solar.es

CARTA DE RECOMENDACIÓN

23 de enero de 2025

A quien corresponda,

Habiendo finalizado satisfactoriamente las prácticas profesionales durante el período comprendido entre el 04/10/24 y el 25/12/24, en el marco de su Máster en Métodos Numéricos de la Escola de Camins (UPC), recomendamos ávidamente el perfil del ingeniero Shreyas Girish, NIE Z0109670B.

Durante el mencionado período desempeño sus tareas en oficina técnica, mostrando validez de conocimientos y manejo adecuado de herramientas tecnológicas. Las tareas se desempeñaron específicamente en actividades de COLABORACIÓN EN EL CÁLCULO ESTRUCTURAL, involucrando modelado en elementos finitos de piezas mecánicas y modelado en CFD.

12th September 2022

RELIEVING AND EXPERIENCE CERTIFICATE

To Whomsoever It May Concern

This is to confirm that ***Mr. Shreyas GIRISH*** *has been associated with us from* ***1st June 2022 to 12th September 2022.***

Shreyas *has fulfilled his diverse tasks to our satisfaction as* ***Senior Engineer - CFD.***

His performance during his employment with us was satisfactory.

We thank ***Shreyas*** *for his services rendered and wish him success for his future endeavors.*

For, Faurecia India Private Limited.,

Shilpa NINAN
Senior Manager - HRBP

COPES Tech India Pvt Ltd
Focused on Excellence

31st May 2022

RELIEVING AND EXPERIENCE LETTER

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. **SHREYAS G** was employed in our organisation from 08th July 2019 to 31st May 2022 and was designated as CFD Engineer at the time of leaving the organisation.

He has been relieved from the services of the company on 31st May 2022.

Your contributions to the organization and its success will always be appreciated. We wish you all the best in your future endeavours.

Yours sincerely,

For COPES Tech India Pvt Ltd

Rajesh Deshilinge Gowda

Director

COPES TECH INDIA PVT. LTD. COPES BENGALURU-94

ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್
भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Electronics Division
PB No. 2606, Mysore Road, Bangalore – 560 026.

Ph : 080 26998264, 26998380, 26998526,
e-mail: hrd-edn@bhel.in

An ISO 9001, ISO 14001, OHSAS 18001 and ISMS Certified Unit

Certificate

This is to certify that

Mr. SHREYAS .G

Students of B.E.

[MECHANICAL ENGINEERING]

JSS. ACADEMY OF TECHNICAL EDUCATION
KENGERI, BANGALORE - 560 060.

were provided with facilities to do Project Work at **BHEL, ELECTRONICS DIVISION, BANGALORE** as per following details :

PROJECT TITLED

"DESIGN AND TESTING OF COLD PLATE FOR TRACTION APPLICATIONS"

Under the Guidance of

SHRI. G.S. VISHNU RAJ
SENIOR ENGINEER / SUB-ASSEBLY - ENGG.

Duration of Project Work	**04 Weeks**	**From**	12.11.2018	**To**	07.12.2018

This permission to do the organisation study was accorded as per request from the institution where the student is studying for partial fulfillment of the completion of the course.

Shailesh kumar

Signature of issuing Authority
with Seal

Place : Bengaluru
Date : 07.12.2018

ಶೈಲೇಶ್ ಕುಮಾರ್, ವ್ಯವಸ್ಥಾಪಕರು / ಮಾ.ಸಂ.ವಿ.
शैलेश कुमार, प्रबंधक / मा.सं.वि.
SHAILESH KUMAR, MANAGER / HRD
BHEL-EDN, MYSORE ROAD, BENGALURU-560026

Triveni
ENGINEERING & INDUSTRIES LTD.

GEAR BUSINESS GROUP
Plot No. 1,2,3, Belagola Industrial Area, K.R.S. Road, Metagalli Post, MYSURU – 570 016, India
T: +91 821 4286501/502 | F: +91 821 4286531
E: admin@gbg.trivenigroup.com
W: www.trivenigroup.com

Date : August 09, 2018
Ref : TEIL/MYS/HR/18

CERTIFICATE

This is to certify that **Mr. Shreyas G (USN: 1JS15ME089)** student of BE in Mechanical Engineering in 6th Semester from JSS Academy of Technical Education, Bangalore, have successfully completed his Internship Training at our Company during the period of **09th July to 09th Aug 2018** under the guidance of **Mr. Santosh S**, Manager (Quality Assurance).

We wish his all success in his future endeavor.

For Triveni Engineering & Industries Ltd.,

Santhosh K
Officer (HR & Admin)