



Deeban Govindarajan

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ABOUT ME

Mechanical Engineer with a master's degree in Energy Engineering and a bachelor's degree in Mechanical Engineering, offering over 10 years of experience across the energy and automotive sectors, specializing in cryogenic systems, vacuum systems, power plants, automotive components, and more

EDUCATION AND TRAINING

Master's degree in Energy and Propulsion engineering

Ecole Central nantes France [07/2018 – 12/2020]

City: Nantes | **Country:** France | **Website:** www.ec-nantes.fr | **Level in EQF:** EQF level 8 | **Thesis:** Coupling CAD-dynamic modeling for the development of innovative heat pumps

- Calculation and performance using **potential flow theory**.
- **Thermal analysis** of heat and mass transfer systems
- Design of mechanical components using **CAD software** and analysis of stresses simulation.
- Design and analyze **cryogenic systems**, including components, layouts, and processes.
- Processes involving an energy **transformation system**
- Proficiency in designing and implementing **control systems** for **cryogenic equipment**
- Constructing combustion system by using **thermodynamics** cyclic process designing

Bachelor's degree in Mechanical engineering

Anna University Chennai [04/2007 – 11/2010]

City: chennai | **Country:** India | **Website:** www.annauniv.edu | **Field(s) of study:** Engineering, manufacturing and construction | **Level in EQF:** EQF level 7 | **Thesis:** Improving the performance of the diesel engine by forced draft aspiration system done by GT-Power software

- Develop methods for particle free assembly and surface cleaning of **vacuum systems** and **superconducting cavities**
- Processes involving **energy transformation system**
- Foundations and general principles of **fluid mechanics**
- Kinematics and dynamics of machine systems
- Design of machine elements and **transmission systems**

WORK EXPERIENCE

Research and development Engineer

Accelerators and Cryogenic Systems [11/2023 – 06/2024]

City: Massy - Palaiseau | **Country:** France

- Technical support for the mechanical, cryogenic and vacuum design of the linear gas pedal **cryomodule**, including the design of **vacuum systems**.
- Design and supervision of the **mechanical design** process for a **cryogenic system**, including the compressor, 4.5 K cold store, 2 K cold store and **cryogenic distribution** network.
- Development of the initial phase of the MYRRHA project (**100 MeV superconducting** proton gas pedal)
- The ability to identify and solve complex problems related to cryogenic systems

- Thermal and structural design of **cryogenic components** (MRI superconductive magnet)
- To contribute to the design, installation, commissioning, operation, maintenance and troubleshooting of the **vacuum instrumentation systems**
- **Piping design** that ensures structural integrity under the extreme conditions of a **vacuum environment**

Mechanical engineer

SEGULA Technologies (Renault lardy france technical centre) [03/2022 – 07/2023]

City: Lardy | Country: France

- Technical leadership of **R&D projects** in collaboration with other project team engineers.
- Technical hands-on skills in equipment troubleshooting (**pneumatics, mechanics**) and **vacuum leak** test failures
- Demonstrate the ability to analyze and interpret data using software such as **MATLAB** and Minitab
- Development of the active emergency braking function (Renault AEB) for ADAS-AEB (**Automatic Emergency Breaking**) systems.
- Mechanical cooling with **intermediate fluid**
- Hands-on experience in building, improving, and maintaining high- or **ultra- high vacuum systems**.
- Calculating and enhancing performance through **mathematical modeling**
- Introducing automated testing tools for validating models via **simulation** and **model verification**
- Design of **energy systems** for internal **combustion engines** and hybrid electric vehicles
- **Management of a project** to develop and launch a **new transmission system**, resulting in a 25% improvement in acceleration and a 5% increase in overall vehicle performance.

RESEARCH AND DEVELOPMENT ENGINEER TRAINEE

Electricity of France [04/2020 – 12/2020]

City: EDF Lab Les Renardières | Country: France

- Coupling CAD and dynamic modeling for the development of innovative **heat pumps** for **Nuclear power systems**
- Passed all training including **start-up and shutdown** of synchronous condensers, parallel operation of emergency **Nuclear reactor** and radiation monitoring equipments
- Research and analyze **nuclear power plant operations** to understand performance, safety, and efficiency.
- Dynamic tool chain model, process **development architecture**, Dymola simulation. The simulation project uses Dymola modeling software to create a dynamic model of the system. System development for simulation includes design validation for thermal analysis.
- The simulation project uses **Dymola modeling** software to create a dynamic model of the system. It also includes system development for simulation, design validation for **thermal analysis**, and **model exchange** and co-simulation on Dymola platforms for **real-time simulation**.
- Development of a chain of programming tools in **Python** for automatic integration with CAD modeling, aimed at optimizing affordable **electrical loads** for the production of consumable thermal resources.

Mechanical engineer

Hyundai Motors India [05/2012 – 06/2018]

City: chennai | Country: India

- Development, plan, and execute component and **subsystem tests**, including development, **leak**, shock, vibe, thermal, proof, and EMC
- Development of a system to measure the level of liquid in a **vehicle's fuel tank** for the Hyundai i20 model, as part of research and development.
- Development of a technical policy on accelerated ageing methods for **thermal and hybrid models**.
- Calculate engine performance and efficiency using **theoretical thermodynamic cycles** and identification models, carry out simulations, and analyze the results obtained.
- Full engineering lifecycle experience (design trade, CAD design, prototyping, **manufacturing**, testing, qualification, production, reuse.
- Carrying out 50 assembly tests (static and dynamic spring rate) on the engine mount prototype.
- Simulation based on an application (vehicle model and scenario), analysis of **CO2 emissions**, fuel consumption and vehicle behavior over a cycle.
- Responsible for analyzing components to ensure compliance with design criteria and specific requirements.
- Test new design for in-house inspection to ensure product meets industry standards.

Thermal engineer

WS industries [05/2010 – 05/2012]

City: chennai | Country: India

- **Power plant** operations and maintenance
- Monitoring the performance and condition of turbines, generators, and auxiliary equipment in **power generation** in powerplant
- Development of performance calculations for **boilers** and **turbines**
- Multi-fuel technology for all combinations - **2x130 MW power generation units**. Installation and commissioning of steam turbines, generators, air compressors and medium-sized diesel engines.
- Detailed performance analysis of the turbine group (compressor and turbine) to identify performance losses at stage and sub-component level.
- Developed performance calculations for boilers, **turbines, heat exchangers**, pumps, fans,
- Collection and analysis of vacuum system performance data to assist with fault finding, for comparison with model simulations and to predict future behaviours
- operation and troubleshooting of ultra-high **vacuum systems** and their instrumentation.

PROJECTS

[02/2019 – 06/2019]

Design of a morphing blade for wind turbines,

[06/2010 – 11/2010]

Diesel engine performance and suction system

[05/2020 – 12/2020]

Dynamic CAD-modeling for the development of of innovative heat pumps

LANGUAGE SKILLS

Mother tongue(s): English | Tamil

Other language(s):

French

LISTENING B1 READING B1 WRITING B1

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B1

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

DIGITAL SKILLS

Dymola (Modelica) / Catia, Solid Edge, Solid Works / programming: Python, MATLAB and SQL / Good knowledge on Ansys fluent CFD analysis software / APIS FMEA Software

ORGANISATIONAL SKILLS

Problem-solving skills

Project management

VOLUNTEERING

[05/2020 – Current] paris

Red cross france

COMMUNICATION AND INTERPERSONAL SKILLS

Good public speaking skills obtained through presenting at events in my role as team leader.

Good writing skills gained through my experience in customer relationship management

NETWORKS AND MEMBERSHIPS

[02/2021 – 07/2021] Rueil-Malmaison

School Ifp Rueil-Malmaison transition energy innovation towards a low-carbon future

[03/2014 – 09/2014] Chennai

Central Institute of Plastics Engineering and Technology CAD Design Technology Technician

[06/2020 – 09/2020] EDF Lab Les Renardières France

Nuclear physics (nuclear reactions, cross sections, fission), neutron balance in a reactor, differences between reactor systems Write here the description...