

Satyanarayanan Mudliyar

M.Sc. Sustainable Energy Systems | 1997 | Indian

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PROFILE

As a forward-thinking Sustainable Energy Systems master's candidate, I am dedicated to implementing and managing sustainable energy solutions. With expertise in thermal management, risk assessment, FEA, carbon capture and sustainable building, I am poised to drive impactful changes. Seeking opportunities to apply and enhance my skills, I aim to contribute significantly to firms dedicated to sustainability, making a meaningful impact on our environmental future.

KEY SKILLS

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|---------------------------|------------------------------|
| - Thermal Engineering | - Computer Aided Engineering |
| - Energy Engineering | - Government Contracting |
| - Mechanical Engineering | - Troubleshooting |
| - Carbon Management | - Team Building |
| - Finite Element Analysis | - Communication |

WORK EXPERIENCE

Company: Volvo Penta Gothenburg, Sweden

Position: Thesis Worker

Period: January 2024 – October 2024

Description:

- My thesis aims to optimize the energy efficiency of Volvo Penta's Active Cooling Unit (ACU) by enhancing the Coefficient of Performance (COP) of both the evaporator and condenser through simulations in GT Suite.
- Leveraging my academic background, I am confident in my ability to drive this project toward substantial achievements.

Tools/SW:

- GT-Suite, Microsoft Excel

Company: N.M.D.C. Limited Nagarnar, India

Position: Contractual Site Engineer

Period: May 2019 - December 2021

Description:

- I oversaw the operation and maintenance of various plant sections, including the Raw Material Handling System (RMHS), conveyor system, and wagon tippler.
- As a Site Engineer in the blast furnace section, I ensured its smooth functioning using conventional methods and prioritized safety measures within the section.

Tools/SW:

Microsoft Excel, Construction Site Oversight, Safety Procedures, Staff Management

Company: SATYA Vahan Pollution Testing Centre Jagdalpur, India

Position: Owner

Period: February 2020 – July 2022

Description:

- I oversee a nationally recognized vehicle pollution testing facility authorized to issue Pollution Under Control Certificates (PUCC) that is accepted nationwide.
- I delegated operational tasks to maintain efficiency while pursuing a master's degree.

Tools/SW:

Government Portal, Emission Testing Software, Customer Relationships

SOFTWARE/IT

- | | |
|---------------|---------------|
| - GT-Suite | - Ashes |
| - EBSILON | - IDA ICE |
| - Aspen HYSYS | - WUFI |
| - Simulink | - CATIA |
| - MATLAB | - Hyper mesh |
| - Pro-Pi | - Solid Works |
| - GAMs | - Ansys |
| - AUTO CAD | - Java |

EDUCATION

Program: M.Sc. Sustainable Energy Systems

Institution: Chalmers University of Technology (2022–2025)

Location: Gothenburg, Sweden

Main Courses:

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|---|--|
| • Heat and Power Systems | • Sustainable Energy Futures |
| • Industrial Energy Systems | • Environmental Risk Assessment |
| • Heating, Ventilation and Air Conditioning | • Variation Management in Electricity System |
| • Energy System Modelling and Planning | • Future Renewable Based Power System |
| • Building Technology Engineering | • Carbon Capture and Storage |
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Projects:

- **Carbon Capture and Storage.**
 - The curriculum explored various carbon capture techniques, including Water Gas Shift and Adiabatic Pre-reformer, along with CCS and emission reduction concepts.
 - Using Aspen HYSYS, we designed a CCS unit for Heidelberg Cementa Slite.
- **Technical design option for a commercial building.**
 - The focus of the task was on the functional zoning, holistic design, and performance of the building envelope and hygrothermal performance of the whole building.
 - Following the Miljöbyggande and using Simulink, IDA ICE and WUFI software on commercial space with offices included.
- **Designing of an energy system on a country grid scale.**
 - The project shaped us to improve the existing energy system and plan for the newer technologies on GAMs software.
 - We designed an energy model for southern Sweden with various generations methods and analyzed the future energy instalments and planed alternatives accordingly.
- **Designing an Air Handling Unit**
 - The objective of the project was to design an energy efficient layout for a museum with certain indoor requirements with the goal of keeping the energy consumption as low as possible.

- **Performing retrofitting on HEN (Heat Exchanger Network).**
 - The project taught us to minimize the use of utilities by retrofitting the hot and cold steams of the Renova plant.
 - This was performed using the software PRO-Pi to alter steam networks by adding heat exchangers and avoiding the use of utilities to achieve the goal of cost effectiveness.
- **Designing plants to optimize energy systems.**
 - We were introduced to EBSILON where we optimized the Nordjylland Power Station, waste incineration plant, Gas-fired power plant with HRSG (Heat Recovery Steam Generator) and Coal-fired power plant.

Program: B.Tech. Mechanical Engineering

Institution: SRM Institute of Science and Technology (2015–2019)

Location: Chennai, India

Main Courses:

- | | |
|------------------------------------|--------------------------------------|
| • Thermodynamics | • Machines and Mechanisms |
| • Applied Thermal Engineering | • Fluid Mechanics |
| • Computer Aided Design & Analysis | • Robotics Engineering & Application |
| • Heat and Mass Transfer | • Mechanical Engineering Design |
| • Strength of Materials | • Production Management |
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Projects:

- **Design and fabrication of a geo-orbital wheel on a wheelchair.**
 - In my final year of bachelor's, our team worked on a modification of the wheelchair, with the goal to make the wheels self-powered and the wheelchair to be foldable and cost efficient.
 - The modified wheelchair was subsequently donated to a hospital.
- **Designing a solar powered pesticide sprayer.**
 - The project goal was to reduce the harmful effect of pesticides on the farmer while spraying in on the fields and making the design sustainably inclined.

TRAININGS/CERTIFICATION

- Customized course on Auto CAD 2D, Chennai, www.caddcentre.ws – 2016/03
- CATIA, Chennai, Krion Consulting Pvt Ltd - Formerly kkmssoft pvt ltd. – 2017/04
- Hyper mesh, Chennai, Krion Consulting Pvt Ltd - Formerly kkmssoft pvt ltd. – 2018/04

VOLUNTEER WORK/INTERNSHIP

- **Summer internship at N.M.D.C. Limited, Nagarnar**
 - Gained comprehensive exposure to steel plant operations during internship, acquiring practical knowledge of industrial processes and plant functionality.
- **Maxx The Fitness Mantra (Company No. U85100MH2007PTC172112), Chennai**
 - I acted as a mediator in providing resources like lab essentials and helping conduct self-defense classes for girls in government schools.
- **Kambo Motors Royal Enfield Showroom, Jagdalpur**
 - Served as a Service Engineer Intern, performing hands-on diagnostics and maintenance on motorcycles, while gaining practical insight into customer service and mechanical troubleshooting.

LANGUAGES

English: Advanced
Tamil: Basic

Swedish: Basic
Kannada: Basic

Hindi: Advanced

REFERENCES

- Almou Stiven : Manager Thermal Penta (stiven.almou@volvo.com)
- Koohnavard Ahmad : HVAC Engineer (ahmad.koohnavard.2@consultant.volvo.com)