

Mohammadhassan Novinnam

Mechanical Engineer

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Profile

Mechanical Design Engineer specializing in 3D modeling and simulation using SolidWorks, Autodesk Inventor (Nasttran), Fusion 360 (simulation and generative design), and ANSYS. Experienced in structural and thermal analysis with a strong focus on design optimization and performance improvement. Familiar with manufacturing processes and design-for-manufacturability principles. Recently developed Python-based automation skills using PyMAPDL to enhance ANSYS simulation workflows.

Selected engineering projects and detailed case studies are available at novinnam.info.

Career Objective

To contribute as a Mechanical Engineer by applying my expertise in mechanical design, structural and thermal simulation, and CAD/CAE development to deliver efficient and reliable engineering solutions. Aiming to continuously expand my technical knowledge, adopt new engineering tools, and enhance simulation and automation workflows in innovative industrial environments.

Experience

University of Luxembourg

Research Assistant

Luxembourg, Luxembourg

Apr 2025 – Nov 2025

- Analyzing heat transfer at the nanoscale using LAMMPS documentation and computational workflows
- Python programming (Matplotlib), Linux (HPC environment), and support of Fortran-based code workflows

Nebraspumps

Junior Project Manager (Intern)

Tehran, Iran

Apr 2024 – Jul 2024

- Acted as liaison between client and engineering team for pump projects
- Prepared and coordinated technical documentation: P&ID, WBS, scope statements, ITP, test reports, commissioning plans, O&M manuals, and as-built files
- Managed client comments, revisions, and document approvals to ensure project alignment and timely delivery

Atlassarma

Heating and Air Conditioning Engineer

Tehran, Iran

Nov 2023 – Mar 2024

- Designed HVAC systems including chillers and Air Handling Units (AHUs) for industrial applications
- Performed compressor selection and refrigeration cycle component sizing using industry-standard selection tools
- Designed evaporators and condensers using USA Coil and Aspen EDR; sized liquid lines using CoolSelector
- Developed production-ready heat exchanger models in SolidWorks

AI Medic

Data Science Intern

Tehran, Iran

Jul 2022 – Nov 2022

- Implemented MA-Net (Mutex Attention Network) using TensorFlow for medical image segmentation tasks
- Performed data preprocessing, feature engineering, and model evaluation using Python (NumPy, Pandas, scikit-learn)
- Developed data visualizations and performance analysis plots using Matplotlib and Seaborn

Ramin Thermal Power Plant

Mechanical Engineering Intern

Ahvaz, Iran

May 2018 – Aug 2018

- Participated in assembly and disassembly of shell-and-tube heat exchangers for maintenance and overhaul operations
- Inspected tubes, baffles, and tube sheets to identify scaling, fouling, and mechanical defects
- Supported maintenance procedures including cleaning, gasket replacement, and leak testing

Education

University of Luxembourg

Master of Engineering — Sustainable Product Creation

Luxembourg, Luxembourg

2024 – 2026

- Focus areas: manufacturing systems and sustainable engineering solutions
- Robotics: completed a robotics course; exploring simulation and control using ROS in Python
- Autodesk Fusion 360: generative design and mechanical optimization
- Autodesk Inventor: 3D modeling, assembly design, technical drawings, and connection calculations
- ANSYS (FEA): Static Structural, Steady-State Thermal, and Modal simulations
- Additive Manufacturing: 3D printing using Prusa printers

Jundi Shapur University of Technology (Dezful)

Bachelor of Engineering — Mechanical Engineering

Dezful, Iran

2016 – 2020

- CAD/CAE Tools: SolidWorks (3D modeling, assembly, technical drawings), CATIA, AutoCAD
- HVAC System Design: Design of air-conditioning systems for a 15-story building (minimum 2000 m² floor area); cooling and heating load calculations; piping system design; radiator and steam boiler selection
- Heat Exchanger Design Project: Shell-and-Tube Heat Exchanger (Design Mode) and Air-Cooled Heat Exchanger (Rating Mode); simulation and analysis using Aspen One
- ANSYS (Fluent, Static Structural) for fluid flow, heat transfer, and structural analysis

Skills

CAD / CAE and Mechanical Design

- SolidWorks: sketching, 3D part design, assemblies, and drawings
- Fusion 360: mechanical optimization and generative design
- Inventor: 3D design, assemblies, drawings, and connection calculations
- AutoCAD: technical drawings
- ANSYS: FEA (Static Structural, Thermal, Modal) and CFD (Fluent)
 - Pymapdl: Python scripting for ANSYS Mechanical

Programming and Computational Tools

- Python Programming
 - Data visualization (Matplotlib, Seaborn)
 - Data processing (NumPy, Pandas)
 - Machine learning (scikit-learn, TensorFlow)
 - Full-stack web development (Reflex)
 - Robotics development (ROS2)
- MATLAB programming
 - Simulink: modeling and simulation
- Linux and HPC workflows in research environments

Language Proficiency

- **English:** C1-certified by IELTS
- **French:** B1 proficiency
- **Persian:** Native / Bilingual