Mohammadhassan Novinnam

Mechanical Engineer

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Profile

Mechanical Design Engineer specializing in 3D modeling and simulation using SolidWorks, Autodesk Inventor (Nastran), 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

Paul Wurth S.A. Luxembourg, Luxembourg
Mechanical Engineer (Intern) Feb 2026 – Present

- Mechanical design and analysis of components for a camera enclosure system in a blast furnace environment
- CAD and CAE tools: CREO: Geometry design, Ansys Fluent: fluid flow analysis of air knife
- Reporting using LaTeX

University of Luxembourg Luxembourg, Luxembourg
Research Assistant 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 Tehran, Iran
Project Manager (Intern) Apr 2024 – Jul 2024

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

Atlassarma Tehran, Iran
Heating and Air Conditioning Engineer 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

AIMedic Tehran, Iran
Data Science (Intern) 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 Ahvaz, Iran
Mechanical Engineering (Intern) 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 Luxembourg, Luxembourg
Master of Engineering — Sustainable Product Creation 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) Dezful, Iran
Bachelor of Engineering — Mechanical Engineering 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 m^2 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
- CREO: 3D design, assemblies, drawings
- 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