

Arvinth Kumar Kumaravel

USA | arvi6627@gmail.com | [LinkedIn](#) | +46769612922

SUMMARY

Experienced Mechanical Design Engineer with 3+ years of expertise in CAD, FEA and manufacturing processes. Skilled in 3D modeling, structural analysis, and optimization, with proven expertise in developing innovative designs and streamlining production workflows to improve product performance.

EDUCATION

Chalmers University of Technology	Gothenburg, Sweden
Master of Science in Product Development, GPA: 3.76/4	Jul 2023
Anna University, Coimbatore Institute of Technology	TamilNadu, India
Bachelor of Technology in Mechanical Engineering, GPA 3.52/4	Apr 2019

TOOLS AND CERTIFICATIONS

Programming	Python, MATLAB, Excel
Design Tools	CATIA, SolidWorks, Siemens NX, Fusion 360, Simufact
Analysis Tools	Ansys, Hypermesh, MSC Adams, Demify
Certifications	AutoCAD, Autodesk Generative Design, SolidWorks

PROFESSIONAL EXPERIENCE

Rototilt Group AB	Umeå, Sweden
Mechanical Design Engineer	Oct 2023 – Current

- Designed and developed tilt rotators and excavator implements, improving **efficiency by 15%** through optimized use of sheet metal, welded constructions, casted components, hydraulics, ensuring CE compliance using Siemens NX.
- Conducted Finite Element Analysis (FEM) simulations to ensure structural integrity, alongside prototype development and testing to validate reliability and performance.

Freelance	Remote, Sweden
Product Designer	Aug 2023 – Current

- Developed CAD models for concept ideas from scratch using Fusion 360 and CATIA, successfully delivering innovative designs to startup clients and ensuring alignment with project specifications.
- Designed metal and plastic components, verified structural stability through Finite Element Analysis (FEA) simulations, and produced 2D manufacturable drawings for prototypes, **accelerating production timelines by 20%**.

Volvo Cars AB	Gothenburg, Sweden
Mechanical Design Engineer	Jan 2023 – Jun 2023

- Developed a three-wheeled urban mobility vehicle with a tilting front half to enhance safety and comfort, focusing on innovative design and functionality.
- Performed **5+ concept analyses**, identified optimal electrification solutions, and developed detailed CATIA models, achieving a **30% increase in structural reliability**.

Hindustan Zinc Limited	Rajasthan, India
Mechanical Engineer	Jun 2019 – Jun 2021

- Optimized the design of couplings and fasteners for SAG mills, ball mills, and pumps, **reducing failure rates by 20%** and managing CAD files of spare parts while implementing process optimization techniques.
- Led development projects by collaborating with suppliers and internal teams, conducted Failure Mode and Effect Analysis (FMEA) to enhance component quality, and drove Six Sigma methods to foster continuous improvement.

PROJECTS

Chalmers University of Technology	Gothenburg, Sweden
--	---------------------------

- Design of Rescue Boat Towing Arrangement** - Created requirement specifications and conducted in-depth functional and market analyses for a new system. Generated and evaluated ideas using Pugh and Kesseling matrices, then designed and optimized a towing arrangement with CATIA and Ansys, resulting in a full-scale prototype with multiple innovative features.
- Design enhancement of conveyors** - Applied Six Sigma tools, including Cause and Effect Diagrams, Pareto Charts, FMEA, Stratification, and Affinity Diagrams, to identify and analyze root causes of spillage. Designed, developed, and implemented technical solutions such as PU scrapers, PU skirts, self-aligning frames, and wash boxes, resulting in a 30% reduction in spillage.

LEADERSHIP EXPERIENCE

Communications Leader, Chalmers International Receptions Committee	Sep 2023 – May 2024
Event Manager, CHARM Event, Coimbatore Institute of Technology	Jul 2018 – Jun 2019