

Arvinth Kumar Kumaravel

Product Developer

CONTACT ME

- 📍 Jägarvägen 14, Umeå
- ✉ arvinth@chalmers.se
arvi6627@gmail.com
- 🌐 www.linkedin.com/in/Arvikumar/
- ☎ +46 769612922

EDUCATION

Product Development, MSc
Chalmers University of Technology
Grade: 4.7/5, 2021 - 2023

Mechanical Engineering, B.E.
Anna University
Grade: 8.8/10, 2015 - 2019

TOOLS

Programming

- Matlab
- Excel
- Python

Design & Analysis

- CATIA
- Solidworks
- ANSYS
- Siemens NX
- Altair Hypermesh
- Simufact
- Materialise Magics
- Fusion 360
- Demify
- Siemens Teamcentre
- MSC Adams
- Keyshot

WORK EXPERIENCE

Mechanical Design Engineer

Oct 2023 – Current

Rototilt Group AB | Sweden

- Design and development of tilt rotators and other implements for excavators
- Working with sheet metal parts, welded constructions, casted components, hydraulics and CE marking using Siemens NX
- Performing Finite Element Analysis (FEM) simulations to verify the structural integrity
- Prototype development and testing for reliability

Freelance Product Designer (Part-time basis)

Jun 2023 – Current

- Developed CAD models for concept ideas from scratch for startup clients using Fusion 360 and CATIA
- Designed metal and plastic components by verifying the structural stability using Finite Element Analysis simulations
- Developed 2D manufacturable drawings for prototyping purposes

Master Thesis

Jan 2023 – Jun 2023

Volvo Cars AB | Sweden

- Development of a three-wheeled urban mobility vehicle with the ability to tilt the front half for improved safety and comfort
- The project included the exploratory concept analysis, electrification solutions, modelling in CATIA, structural analysis and material selection

Mechanical Engineer

July 2019 – Jun 2021

Hindustan Zinc Limited | India

- Design optimization of couplings and fasteners of SAG, Ball mills and pumps
- Handling CAD files of spare parts and dealing with process optimization techniques
- Management of development projects by dealing with suppliers and internal teams
- Performing Failure Mode Effect Analysis on components to improve quality
- Develop and implement Six Sigma methodologies and culture into the organization

PROJECTS

AoA Research Project

Jan 2023 – Aug 2023

Chalmers University of Technology | Sweden

Simulation Study for Optimization of Screening Performance

- Developed a CAD model of the hopper, belt and screen deck in CATIA
- The model will be simulated using the Discrete Element Simulation (DEM) by creating rock materials with the help of the Demify software
- Optimum operating conditions will be derived based on the analysis of the analysis results

LANGUAGES

| | |
|---------|------------------------|
| English | <div><div></div></div> |
| Tamil | <div><div></div></div> |
| Hindi | <div><div></div></div> |
| Swedish | <div><div></div></div> |

AWARDS

- IPOET Scholarship (224,000 SEK)
- RISH Scholarship (10,000 SEK)
- AFSHF Scholarship (8,000 SEK)

CERTIFICATIONS

- Generative Design for Performance and Weight Reduction, Autodesk
- Solving Non Linear Equations with MATLAB, Matchworks
- AutoCAD Certification, Autodesk
- Solidworks Certification, Udemy
- Hypermesh Student Certification, Altair University, Troy, Michigan
- Certification on Manufacturing of Composites, NPTEL

PUBLICATIONS

- K. Arvinth Kumar, V.P. Praveen, M. Linkesh, and N. Sundara Subramanian, "Modelling, Simulation and Autotuning of PID Controller for a Cart and Pendulum System," In Proceedings of the International Conference on Industry 4.0 (ICI 4.0), Coimbatore, India, Jan 9-11, (2019).

AoA Research Project

Jan 2022 – May 2022

Chalmers University of Technology | Sweden

Literature Study of the Contribution of Digital Technologies for Data Management towards Green Production

- The research was based on four main factors - Selection of Relevant Papers, Technology Mapping, Analysis of Environmental Contribution, User Identification
- Digital technologies were classified into seven different groups and their correlation with the eco-efficiency principles was mapped
- Seven different industrial user departments were recognized and the most benefitted departments from the digital technologies were identified

Additive Manufacturing Project

Jan 2022 – May 2022

Chalmers University of Technology | Sweden

Bike helmet design for Additive Manufacturing

- Developed a topology optimized 3D model of a bike helmet for material reduction
- Selected material and performed drop test simulation using finite element method (Ansys)
- Prototyped the model using the material extrusion additive manufacturing method and finalized upon the most efficient method for printing

Product Development Project

Oct 2021 – May 2022

Swedish Sea Rescue Society | Sweden

Design of Rescue Boat Towing Arrangement

- Created Requirement Specifications and performed complete function and market analysis for the development of the new system
- Performed Idea Generation, Evaluation and Rejection of Concepts with the help of Pugh and Kesselring matrices
- Design and optimization of towing arrangement with CATIA and Ansys were carried out
- Full-scale prototype was developed with many useful features

Six Sigma Project

Feb 2020 – Oct 2020

Hindustan Zinc Limited | India

Design enhancement of conveyors

- Analyzed the factors leading to spillage with the usage of six sigma tools such as Cause and Effect Diagrams, Pareto Charts, FMEA, Stratification and Affinity Diagrams
- Generation of ideas and selection based on the process compatibility
- Designed, Developed and implemented technologies such as PU scrappers, PU skirts, Self-Aligning frames and Wash Boxes to reduce spillage

Undergraduate Thesis Project

Aug 2018 – Mar 2019

Anna University | India

Aerodynamic Drag Reduction using Dimples

- Developed a simple 3D model of a car with dimples on it using CAD software
- Performed CFD analysis to demonstrate the reduction of drag force using dimples
- Performed comparative studies on the effects of dimple depth on drag force and lift

ACTIVITIES

- Communications Manager at the Chalmers International Receptions Committee
- Research Associate at the Industrial and Material Science Department
- Student Ambassador of the Chalmers University
- Product Development Introduction Week Leader
- Corporate Host at CHARM fair