Shailendra Singh

Mechanical Designer

FairCAD.com

PERSONALS

Name	Shailendra Singh
Occupation	CAD-CAM-CAE Professional
Birth, Born	August 1984, Delhi
Phone	807-634-9282
Address	New Delhi, Hauz Khas

WHY ME?

I am a mechanical design professional, passionate about functional product design and solving genuine practical problems. I have converted several projects from idea to reality which involves several stages including, conceptualization, engineering research, feasibility study, component selection, basic CAD, design optimization using FEM/kinematic studies, Professional CAD, engineering drawings and finally product video and realistic renders. As a freelance Mechanical designer, I have delivered on every single project in the past and have a flawless record and several client's testimonials to indicate the same. However, I believe that any significant work requires a team effort, so I want to be the part of a team which is dedicated to making a difference in our lives.

FORMAL EDUCATION

2013 SUSTAINABLE DESIGN
IIT DELHI M.Tech 7.8
Thesis on Engine design

2008 MECHANICAL ENGG
ANNA UNIV. B.E. 75%
Project on Mechatronics appliance

WORK EXPERIENCE

Now
NOV 14 — **FairCAD Inc, New Delhi**
INDUSTRIAL DESIGNER/FOUNDER

Product conceptualization and sketching, project research, feasibility study, component selection, supplier sourcing, basic CAD, design optimization using FEM/kinematic studies, CAD refinement, engineering drawings, assembly drawings/manuals, product video and photorealistic product renders. ***Details, portfolio and Client testimonials at www.faircad.com***

AUG 14
AUG 13 — **AMITY UNIVERSITY, NOIDA**
ASSISTANT PROFESSOR

Research and teaching responsibilities Undertaken courses on material science, metrology, engine management system, engineering drawing. Faculty advisor for FSAE race car design and prototyping.

SEP 08
NOV 09 — **CONCORD MOTORS, Chennai**
SERVICE ENGINEER

Advicing, overseeing and troubleshooting cars and customer relations

SKILLS

- Mechanical Design
- Engg Mechanics
- IC Engines
- CAD-CAM-CAE
- Concept Sketching
- SolidWorks
- SW Composer
- AutoDesk Inventor
- AutoDesk AutoCAD
- AutoDesk Fusion 360
- ANSYS FEM
- DS CATIA
- Autodesk ALIAS

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Portfolio

Shailendra Singh
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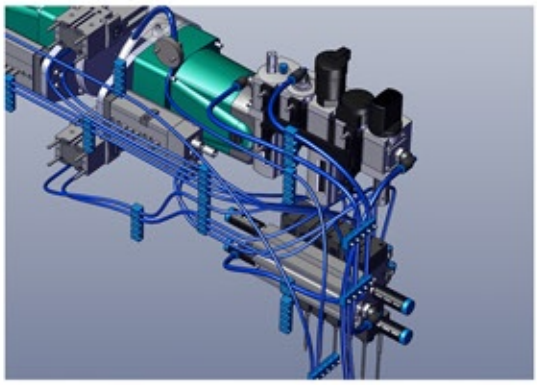
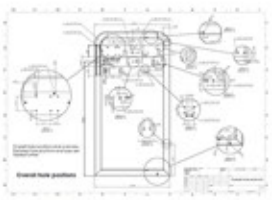
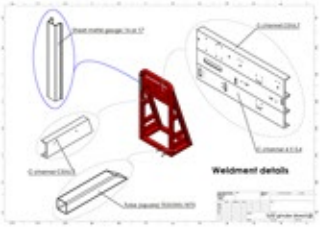
Freelance industrial projects

◆ Semi automatic grinding machine, Nov 2016

Semi Automatic Saw Grinding machine developed from scratch. It involved sketching the concept and conceptualizing, Selection of pneumatic cylinders, control valves, air handling unit and other connecting elements. The frame involves weldments design and component connections use routing design. The operator presses a button to open the grippers which close once the blade is placed, after which the grinding cycle starts. The cylinders move forward with motors, coolant spray starts, grinding wheels move up to a set distance, then move back to start position. The whole unit is controlled by a PLC.







◆ Compact electric kitchen cleaner, May 2015

This project involved developing a compact, handheld electric kitchen cleaner which can be used for miscellaneous tasks. The project involved creating the device from scratch and developing its mechanical and electric/electronics parts. This plastic body and grip had to be injection moldable and electronic circuitry had to match industry standards. The design had to comply with UL safety standards so that it can be launched into the market without hassle. The product was designed and the prototype was built to validate the design.

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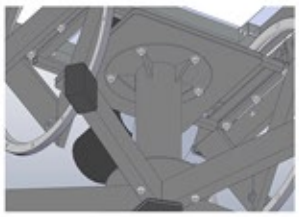
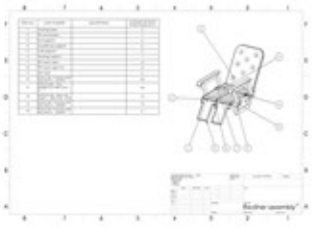
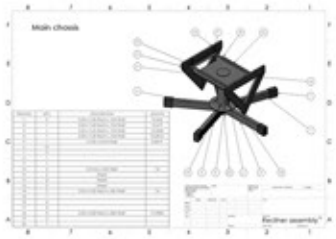
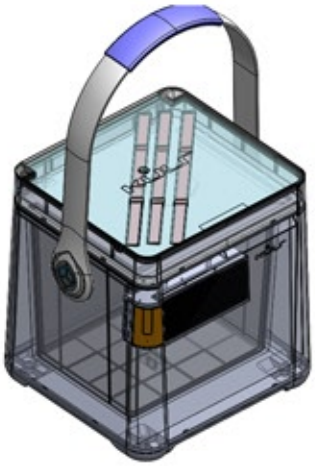
Freelance industrial projects

Zero gravity ergonomic recliner, May 2016

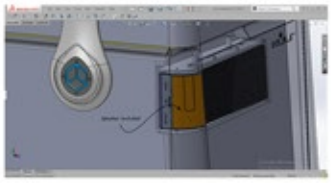
The project was about designing and prototyping a zero gravity recliner. The recliner had to have the functionality of reclining to any position, tilt, and rock. Along with these three functions, the user had to be able to perform hamstring stretch and quadriceps stretch on it. The tilt was provided using a ring gear and pinion driven by a motor. Tilt and rock were provided using an existing mechanism because of manufacturing considerations. The functionality to perform stretches was provided by using a lever operated recliner mechanism on independent linkages for each leg. The designed involved selecting appropriate ring gear/pinion system and frame design using weldments

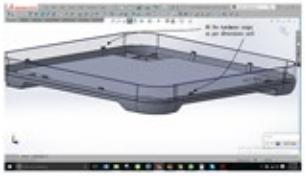





Portable camping ice box, May 2015



The project involved conceptualizing and designing a portable ice box for camping purposes. The design had to be manufacturing ready and all the plastic parts had to be injection moldable. The insulation was achieved by a foam sheet sandwiched between two plastic walls. Special considerations had to be made regarding the manufacturing tolerances as all the parts had to fit in precisely. Parts were held together by employing snap features and screw bosses as well. All the considerations had to be made about the injection molding



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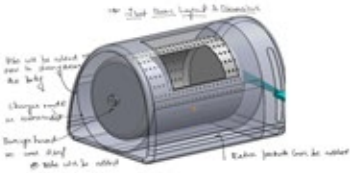
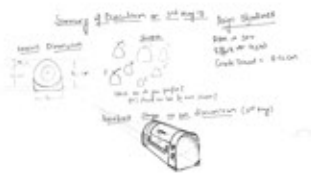
Freelance industrial projects

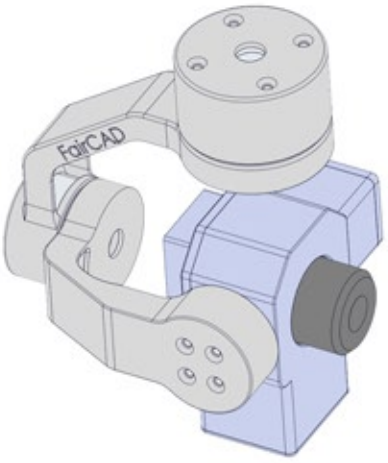
Portable foot operated washing machine, June 2017

This project was about designing and prototyping a compact and portable foot operated washing machine. The product was aimed at rural and expat population so the primary goal was to make it solely manual, compact and portable. The user cranks the paddle with his foot which rotates the drum inside the machine. The RPM is improved by utilizing a 1:50 gearbox and a one-way freewheeling bearing. The plastic parts had to molded hence all the considerations had to be made in modeling to minimize any rework and manufacturing defects.

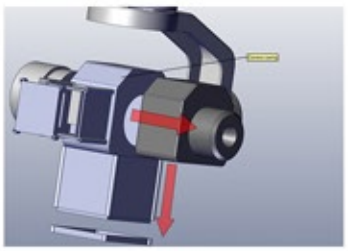


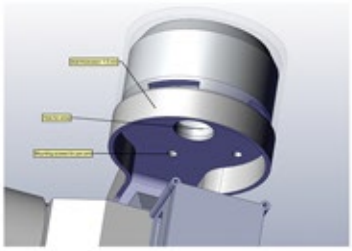


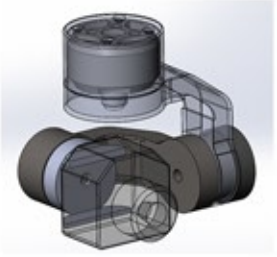
Gimbal for drone camera, Jan 2015

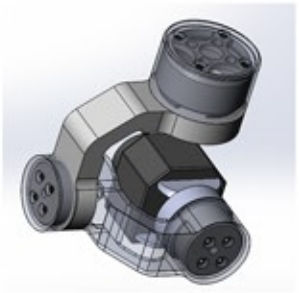


This project involved the design of a camera gimbal which stabilizes the camera on a drone.It had to be mass produced so considerations had to be made for the part to be injection moldable. The assembly involved housing two motors inside the gimbal arms which orients them. Motors are screw mounted for which provisions had to be made on arms. The design also involves modeling the housing for the camera and supporting accessories. Connecting wires run along the inside of arms.









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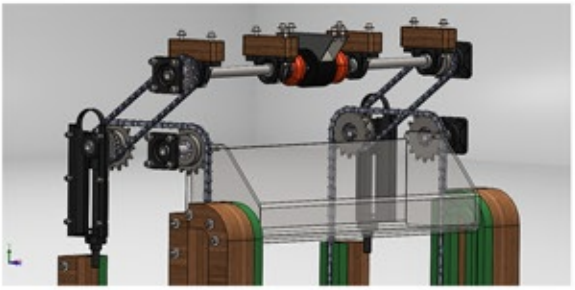
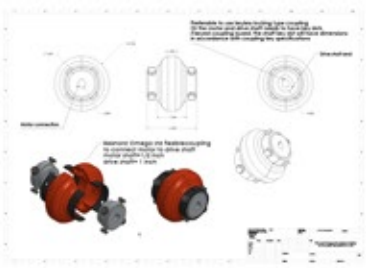
Freelance industrial projects

Semi-Automated closet , Feb 2015

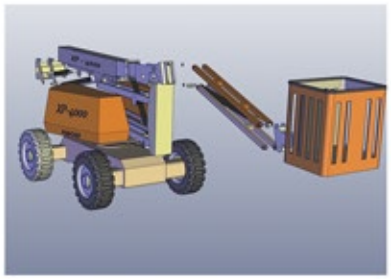
The project involved designing a semi-automated closet which will save a lot of space compared to a conventional closet and improve comfort and convenience for its user. The design has two sets of vertical rows of shelves which increase the storage capacity to twice. It also allows for the height to be over 10 feet tall which further increases the capacity. A dual through shaft motor drives the chains through a shaft and flexible couplings. The design has chain slack adjusters which compensate of chain extension over time.

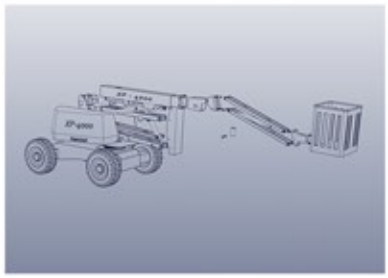


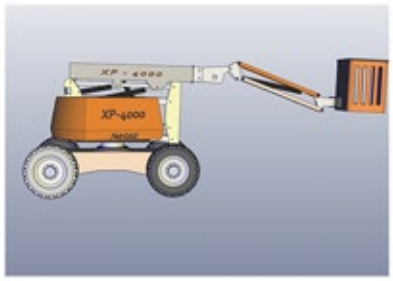


Modeling a man-lift, Jan 2015

The project involved making a precise model of a specified man-lift which had to be 3D printed for display purposes. The scaled down dimensions had to be precise so that it represents the replica of the actual machine. CAD modeling involved making each part separately which will be 3D printed so the machine can be assembled later.







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Academic thesis/projects

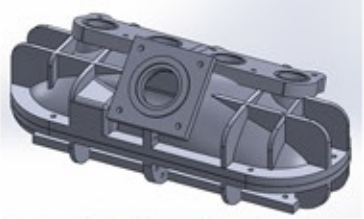
M. Tech Thesis, Energy Studies, IIT Delhi, Aug 2013
Center for Energy Studies

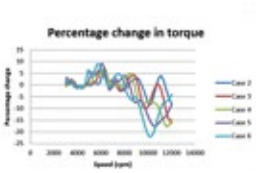
Design and prototyping of breathing system of high speed engine to be used in IITD Formula SAE race car

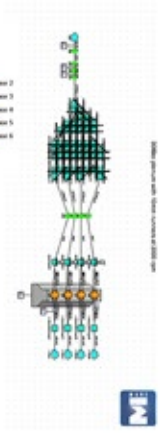
Under guidance of:

- Prof. L.M. Das, Centre for Energy Studies, IIT Delhi
- Prof. P.M.V Subbarao, Department of Mechanical Engineering, IIT Delhi

The thesis investigates the intake and exhaust design of a high-speed engine and its effect on speed, torque, and power characteristics. The effect of runner length, valve size, plenum volume and exhaust sizing were studied and were optimized for Formula SAE race event. The results were used to design and prototype the intake and exhaust of FSAE IIT Delhi race car in 2014. The theoretical design was first made and based on it 1D CFD modeling was done on Ricardo WAVE software. The results had to be validated on an experimental test bed on a Honda CBR 600R engine. Later on, the Race car was built as a team of nearly 20 students







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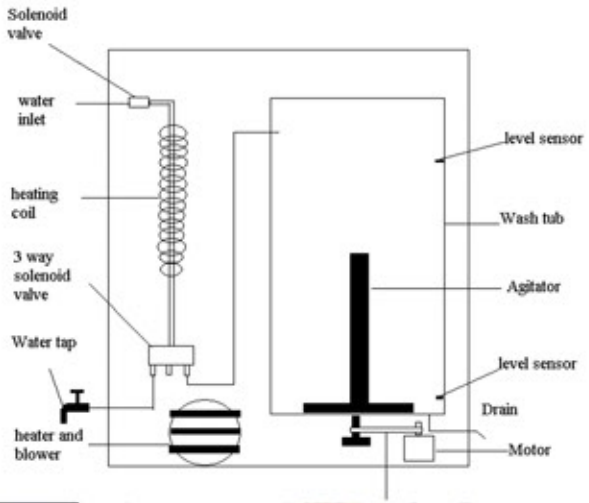
Academic thesis/projects

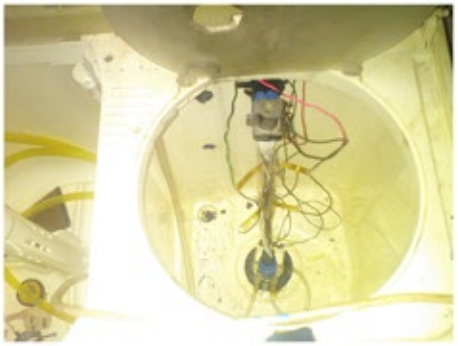
- **B.E. desertation project, Mechanical engg. Aug 2008**
  Jaya engg. college, Anna University, Chennai

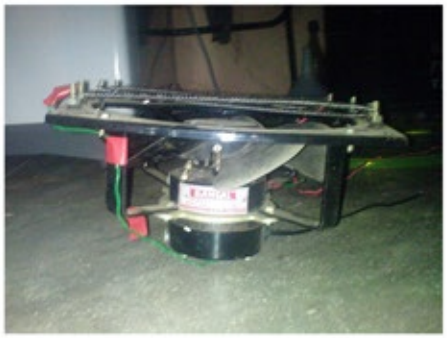
Design and prototyping of a semi-automatic multi utility appliance

Under guidance of:
- **Prof. Palavarnan, Jaya engg. college**

The project intended to make a fully automatic multi-utility appliance. It was designed to have the following functionalies
Cloth washing
Drying
Dish washing
Water heating
Room heater
Room cooler
A scraped washing machine body was used and was modified and automated to perform the above functionalities. An 8085 mircrocontroller was used which ran a program to control the solenoid valves to perform desired functions.







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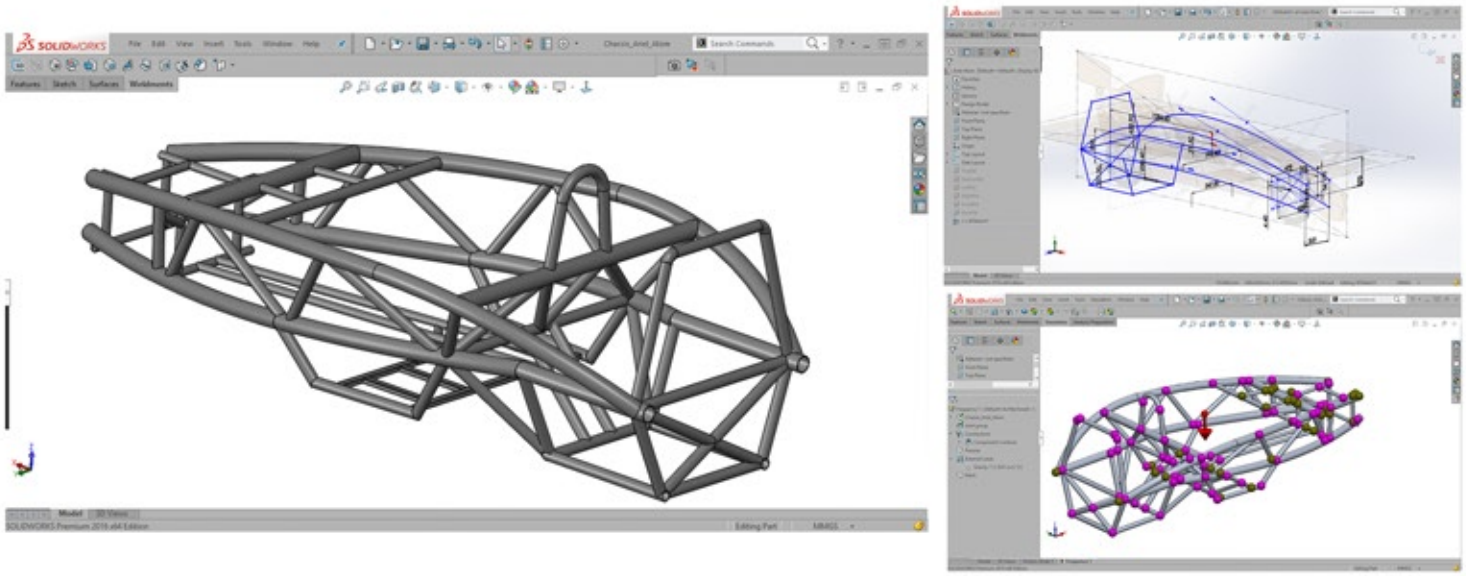
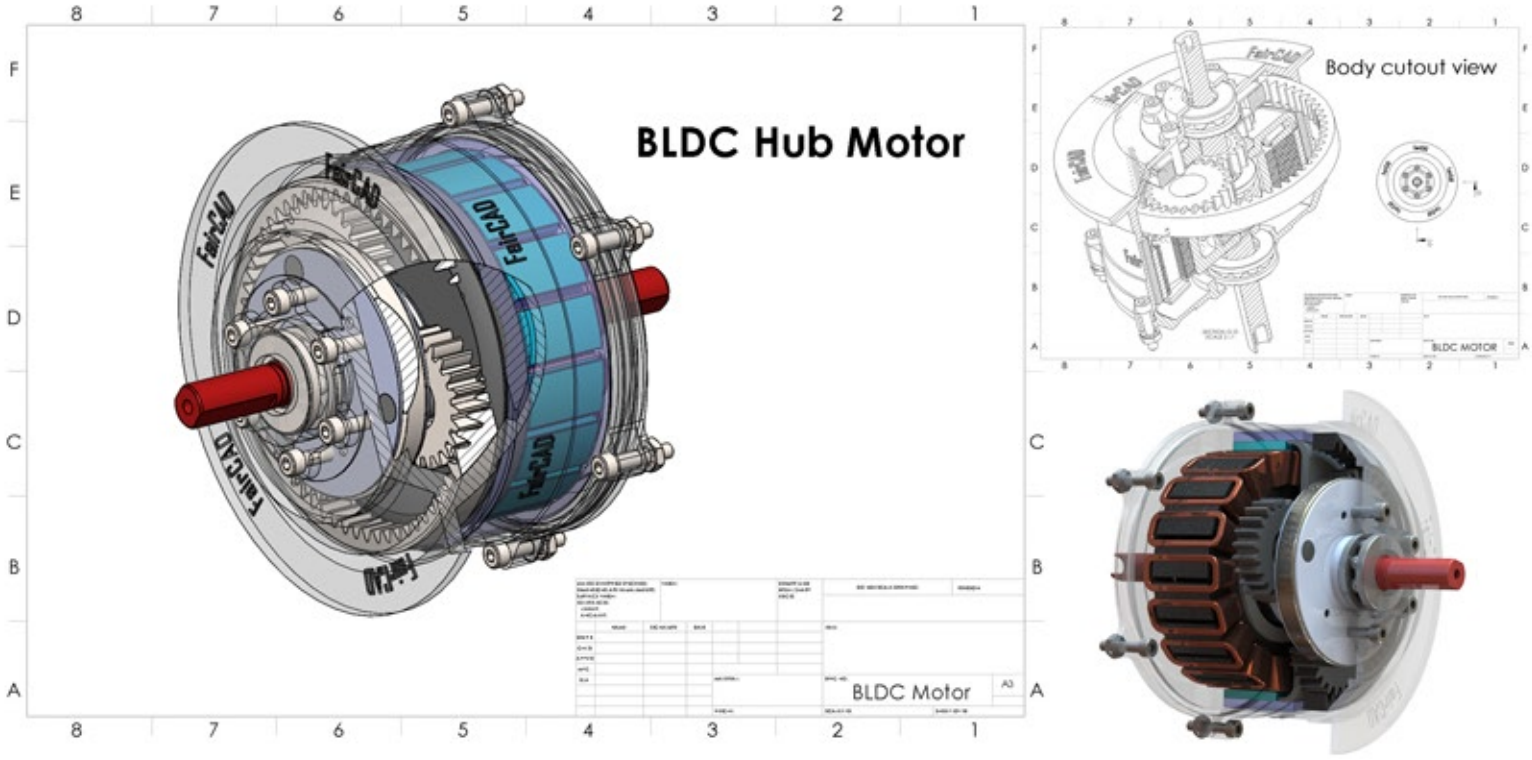
CAD and personal projects

◆ Ariel Atom chassis, modeling and FEM, Jan 2017



◆ BLDC Hub motor assembly, Mar 2017



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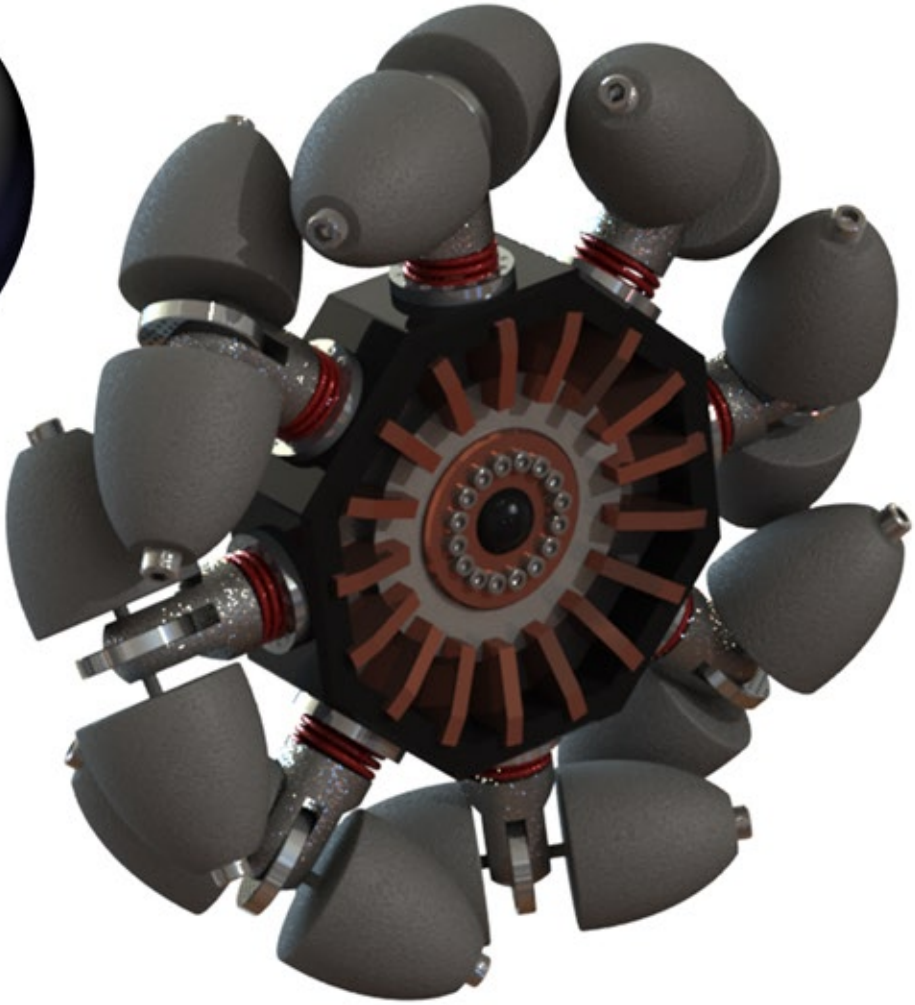

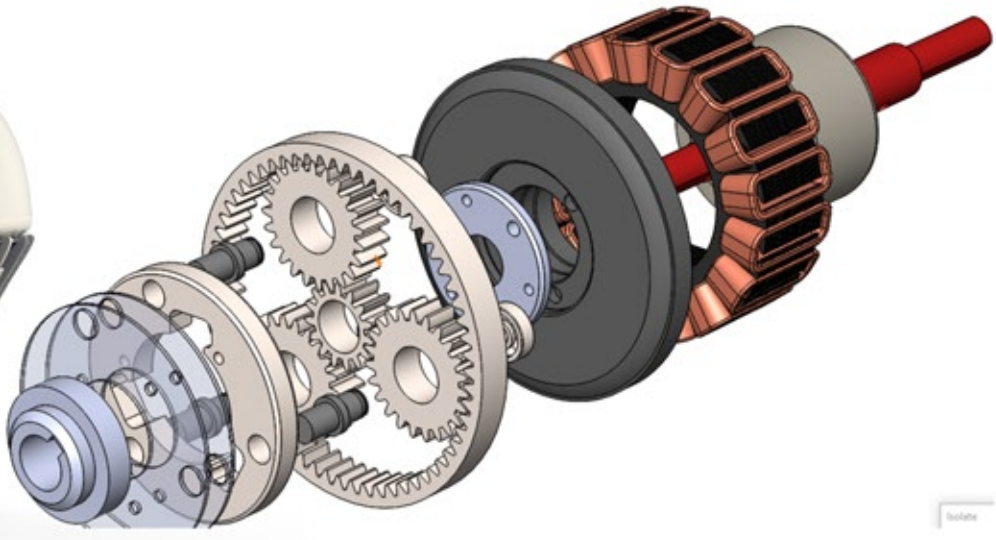

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Concept sketching

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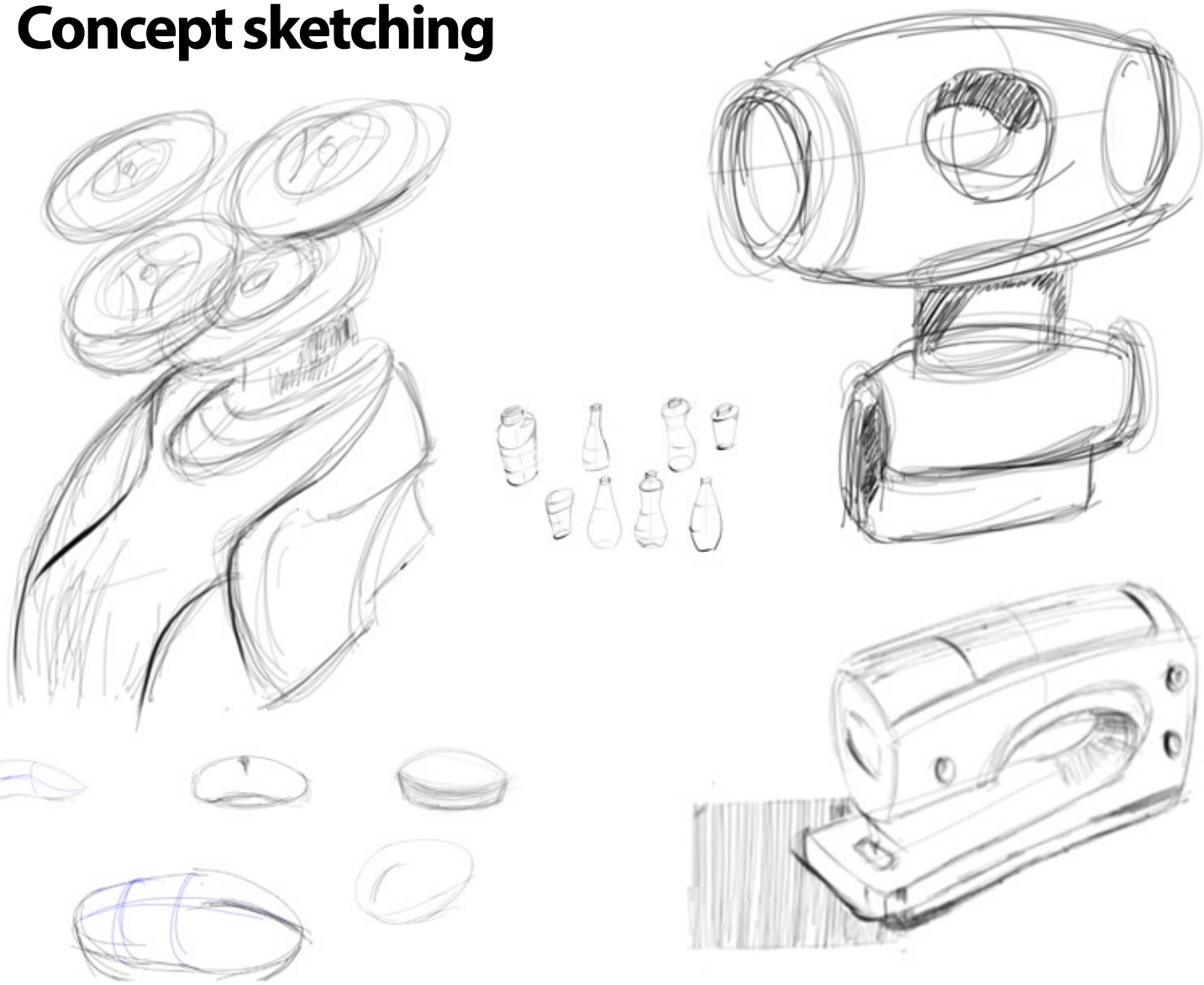

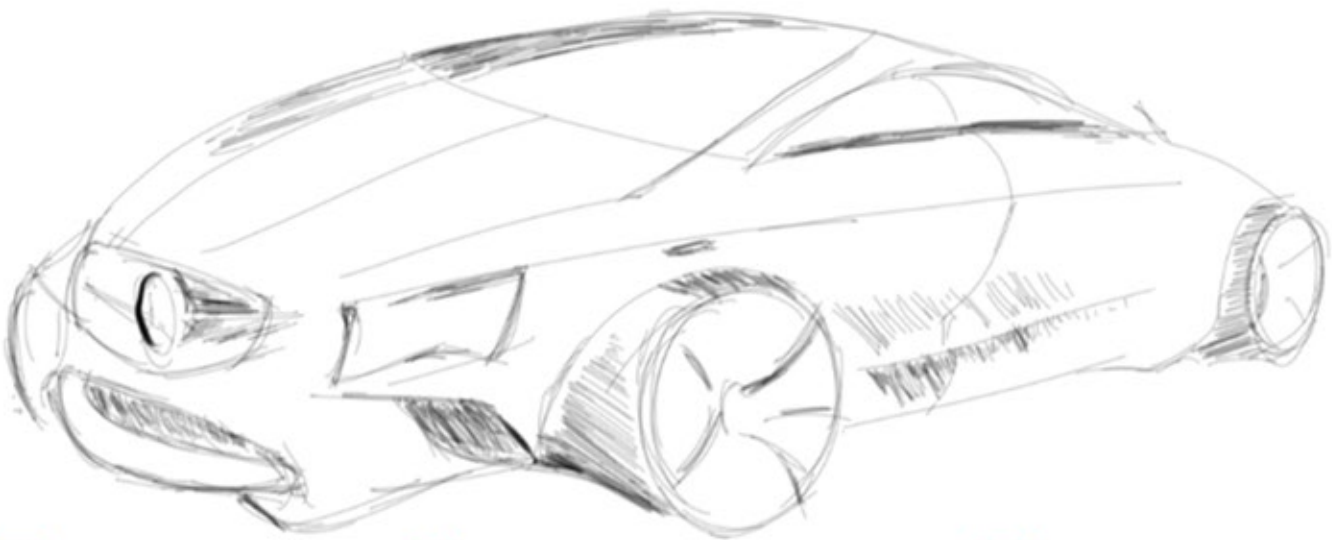

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Seminars/Workshops

- **Basics of CAD with SolidWorks and 3D printing**

  Makers Asylum, New delhi, Aug, may 2015

- **FSAE race car design and prototyping**

  Amity university, Noida, Mar 2014

- **Engine design in FSAE race car**

  IIT Delhi, Feb 2013

- **Organic Robotic for school kids**

  Public school, Bombay, Sep 2014

Formal education

M. Tech - Energy Studies, 7.8 GPA, 2011-13
Cenre for energy studies, IIT Delhi

B.E. - Mechanical engineering, 75%, 2004-08
Jaya engineering college, Anna University, Chennai

HSC - Kendriya vidyalaya, Chennai, 64.2%, 2003-04

SSC - Kendriya vidyalaya, Chennai, 73.6%, 2001-02

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Reviews and testimonials

"FairCAD did a tremendous job! They went above and beyond the scope of the project.The level of detail and accuracy was unparalleled. We WILL be doing business in the very near future. Thank you!"
Keith Tucker, CTO Toy startup

"FairCAD does some really amazing work! I had a very complicated project, which was split into 3 phases, and he was happy to work with me for some excellent and very time-efficient progress on phases 1 and 2. I actually was so impressed with his work, that I am now continuing to work with him beyond my initial scoping, I plan on continuing to work with FairCAD. I can't recommend him enough, seriously. Happy to be a reference if you wanna contact me directly and ask anything specific."
Ash Mallecka, MBA

Very noble hard working guys, will surely hire again"
Langley Garner, product startup

"The most professional people I have ever met. Gave out of the box ideas and the project turned out to be much better than I ever imagined. Will definitely recommend and will hire again"
Vijay anand, Makertech

"They have some serious skills. I always love to work with them. Honest and hard working, fast response. Will definitely hire them again. Thanks "
Ashraf, Design startup

"Keen to work under guidelines and puts his whole hearted efforts. He understands different aspects of design and thus preferred choice"
Ragvendra, Laemorian, Product startup

Source: freelancer.com/hireme/cadninja

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