

ALGORITHMS AS DESIGNERS

Hilja Kaitila Vehicle design
Graduation project **2017**



*“Remember, the future is not what people predict
but it can be what you want it to be
if you have a vision.”*

*Raphael Linari,
Lada Studio Chief, Moscow*

Abstract

The topic of graduation project is to create a design process that benefits from computing science by using algorithms and A.I. as part of the process.

The focus is on how designers can exploit from existing programs that have a large volume of users and how research results can be applied to Lada's renewed brand image.

Tiivistelmä

Opinnäytetyön aiheena on luoda muotoiluprosessi, joka käyttää algoritmeja sekä tekoälyä osana prosessia.

Työssä keskitytään siihen, kuinka muotoilijat voivat hyötyä sovelluksista joilla on suuri määrä käyttäjiä ja kuinka tutkimuksen tuloksia voidaan soveltaa Ladan uudistetun brändi-imagon rakentamiseen.

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1. Introduction

1.1 Subject & background

Intellectual programs and devices are playing bigger part in our daily lives as most of our electronical products include intelligent aspects such as our smartphones that can inform us about the weather, friends who are nearby, what people around us are doing and so on. At the same time algorithmic programs collect massive amounts of information about users in variety of applications like Facebook, Instagram or Google Chrome.

As Artificial Intelligence (A.I.) becomes more common in many fields of science, it is important to search ways to include it to the creative field and in design. How can we make design process or designers work more easier, accurate or faster? Or how could we exploit that massive amount of information about users that they are providing while pinning images on Pinterest or sharing articles on Twitter?

At the same time Lada, iconic Russian car brand, is developing new fresh and modern brand image and direction for brand. How can A.I. make Lada unique and to step out from other car brands?



1.2 Research frame

In my graduation project I am going to delve into finding a process that benefits from users social media feed. What user likes, shares, downloads or uploads is very important to create a visual profile of users taste on which designer can rely the creative work on.

The end result will be a process of creating a directional concept for random social media user by using her visual data combined with Lada's design DNA. In this project I am showing the process behind the concept which will be developed further together with Raphael Linari until Stance17 Degree Show exhibition on 24.-27.5.2017 in Ace Corner Finland.

2. Algorithms

2.1 What algorithms are?

In computer science an algorithm is briefly described as a list of rules to follow in order to solve a problem. Algorithms operate tasks such as calculating, data processing and automated reasoning. An algorithm applies also to more ordinary functions. For example you can have an algorithm for finding something that you are looking for, sorting laundry or for travelling from home to work.

A good algorithm fills two criterias, first it needs to solve a problem and secondly it needs to do it efficiently. By choosing the right algorithm for the task gives the output faster.

Almost every area of science, art, design and engineering, new algorithms will allow grand competence of understanding and development.

New algorithms are constantly created in biological science for purposes such as to design molecular structures to find new drugs or compounds.

2.2 Variety of algorithms

One of the most important group of algorithms are sorting algorithms which puts things in order. For example when emails or pictures are sent across the world through internet, the information will be scattered to smaller quantities which will be sorted in right order by an algorithm. The most iconic sorting algorithm is *Bubble sort algorithm* which uses blocks instead of numbers. Bubble sort algorithm arranges blocks of information by comparing two nearest blocks to each others and continuing until blocks are arranged according to size. *Merge sort algorithm* works on principal of 'divide and conquer' and is much faster than Bubble sort as it divides the blocks to smaller groups sorting them and after that starts to merge the groups together. Last two groups are merged together by comparing the sizes of the objects by one pair at a time so that the merged group becomes sorted. Other similar sorting algorithms are Quick sort, Shell sort, Select sort and Insert sort algorithm.

Examples of other well known algorithms.

Audio and video *compression algorithm* is used by Google Hangouts to transfer live video across internet. Google Maps uses *Route finding algorithm* to calculate different options for routes to travel. *Rendering algorithm* is used to colour 3D models to fit to the environment. *Optimization & Scheduling algorithm* is used by NASA to rearrange satellites. *Minimax* is a games algorithm program that was developed to never lose.

In physics algorithms are commonly used to predict weather and climate patterns.

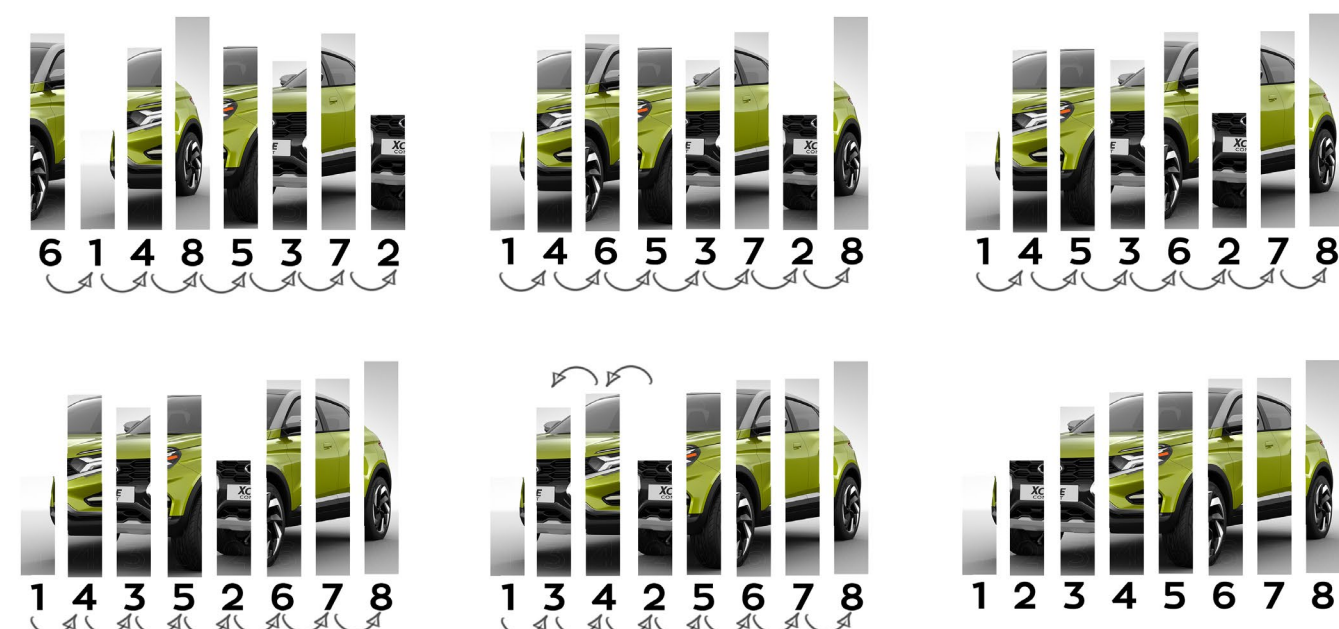


Chart 1 Bubble sort algorithm working method



Chart 2 Merge sort algorithm working method

2.3 Algorithm applications

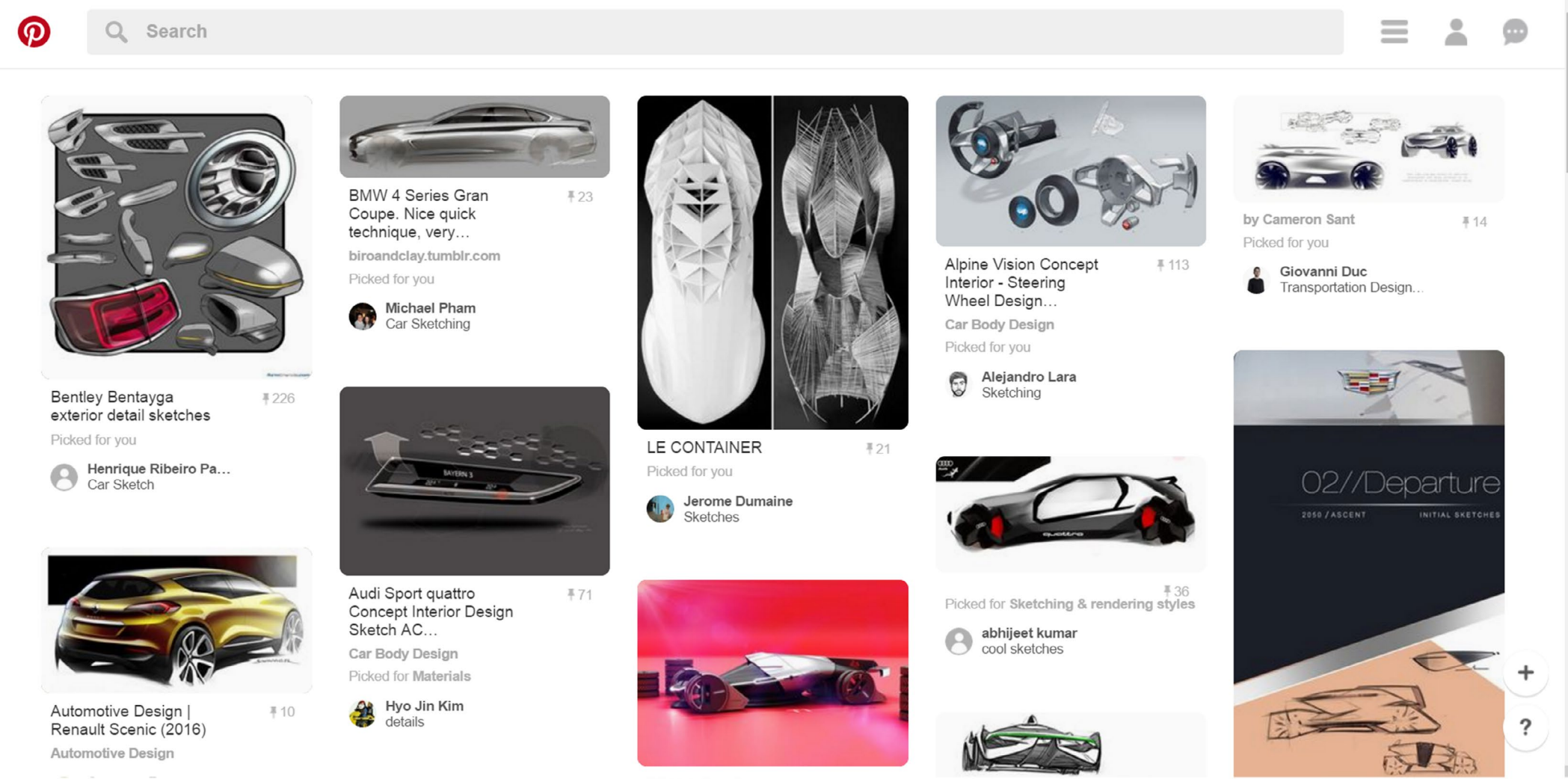
There are many programs around us that use algorithms and we've used to use them all the time around-the-clock. Facebook and Twitter uses algorithms to show stories in our timelines that might interest us according to our browsing history and status. Different filters on Instagram and Snapchat alters our photos and Pinterest recommends us new photos to save, like and share. Some of these social media applications use programs such as pattern and image recognition, pattern making and image altering tools. Ditto and many other social media apps hold enormous quantity of information and potential to exploit to further use. For example Facebook has over 1,721,000,000 monthly active users who spend more than 640 minutes on Facebook every month. There are over 7 million apps and websites that integrate with Facebook, over 20 million apps are being installed on Facebook each day and there are over 3 million links shared every hour.

Correspondingly Instagram has overall of 500,235,000 users and average of 52,000,000 uploaded photos per day. Most of Instagram users are between 18-29 (28 %). When Pinterest has a total of 73,500,000 users in which 68% are female. Facebook has developed the *News Feed Algorithm* that observes how much user interacts with friend, page or public figure who posted the story. It also counts the number of likes, shares and comments a post receives from the world at large and from your friends in particular. News Feeld algorithm tracks how often user have interacted with this type of posts in the past by format (photo, link, text) giving similar results, if you like to watch kitten videos Facebook feed will recommend you more kitten videos, simply explained. Basicly all mentioned applications work under the same logic by collecting data of what have you liked, shared, commented or saved.



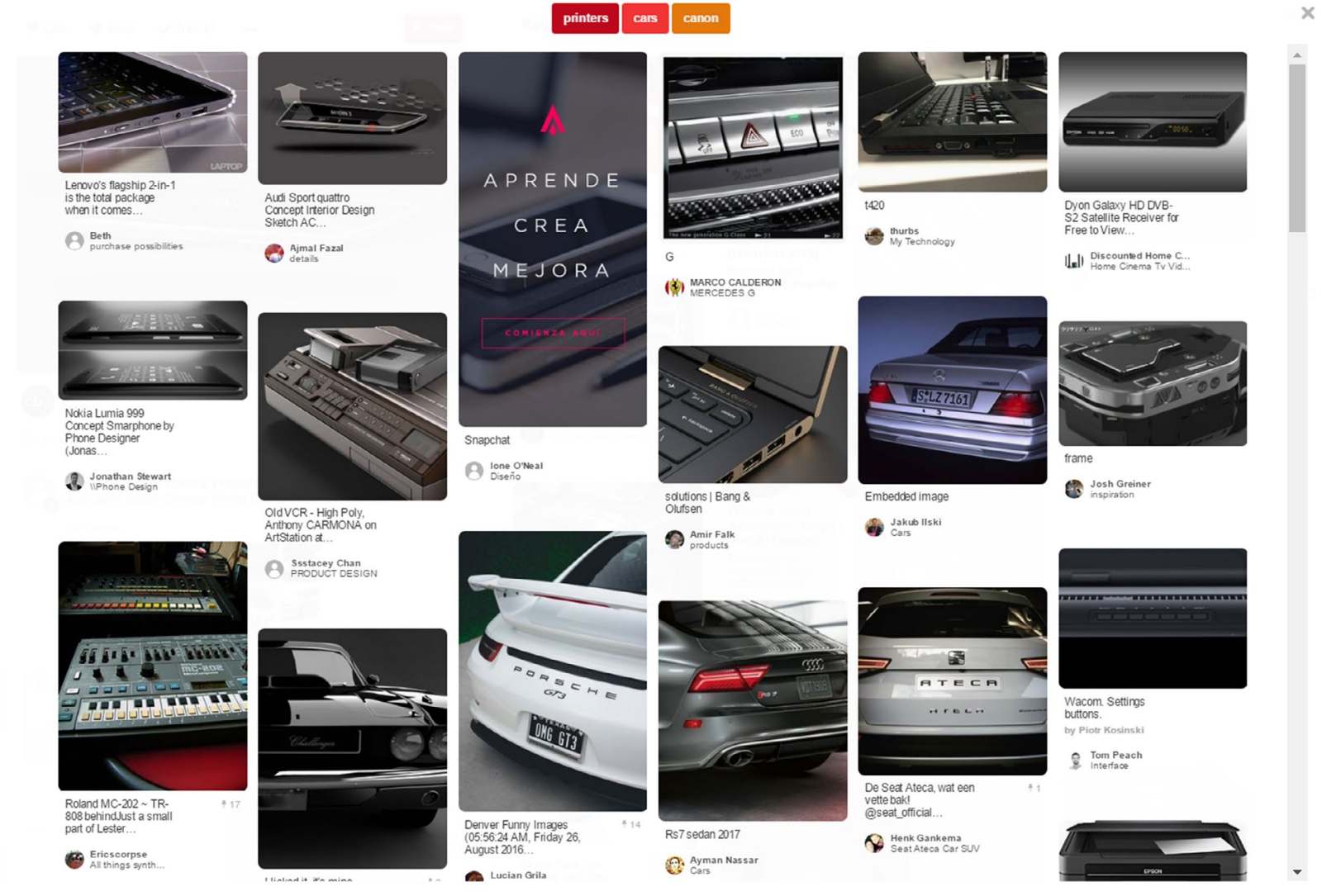
Basics of Pinterest

PINTEREST FRONT PAGE



VISUALLY SIMILAR RESULTS

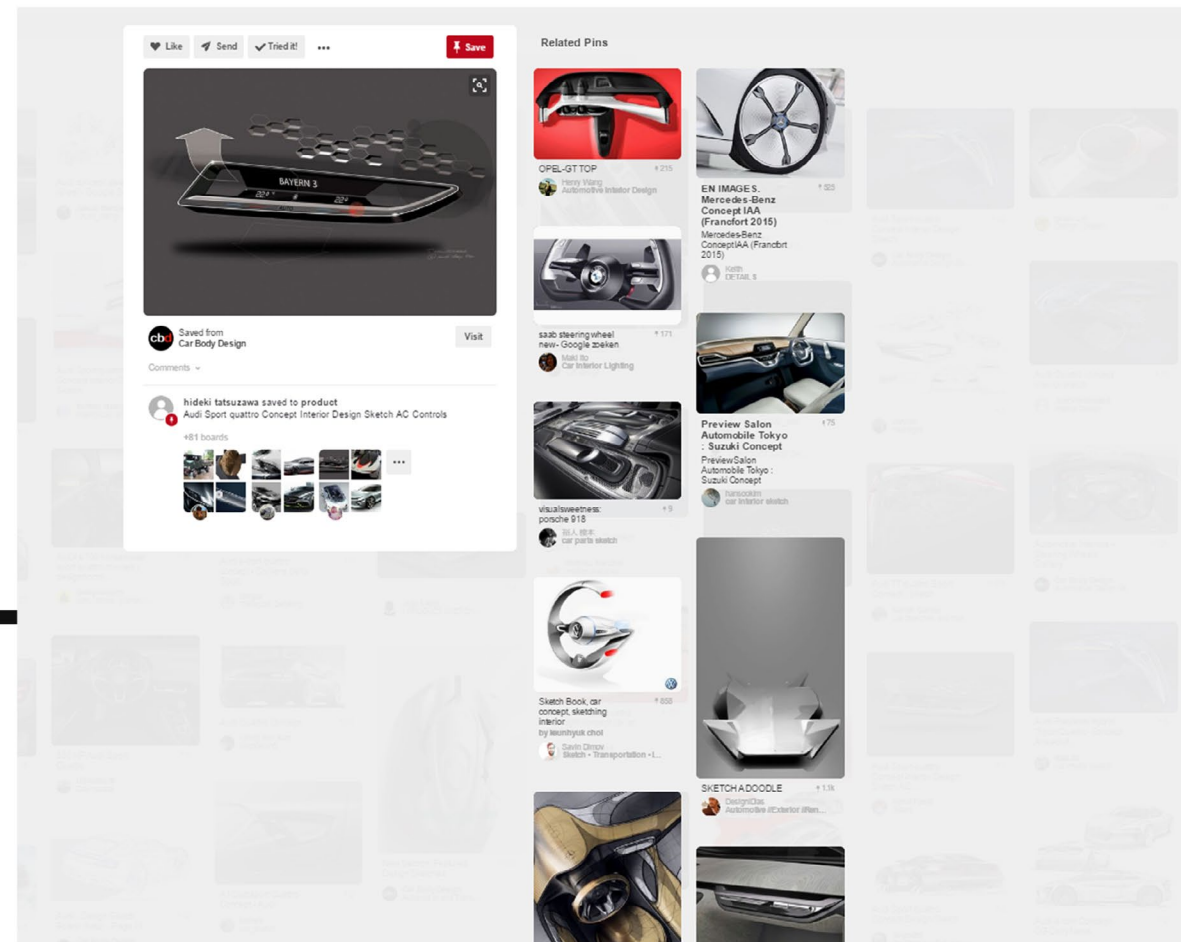
Visually similar results



Pinterest recommends photos e.g. Pins that you might be interested according to your browsing history.

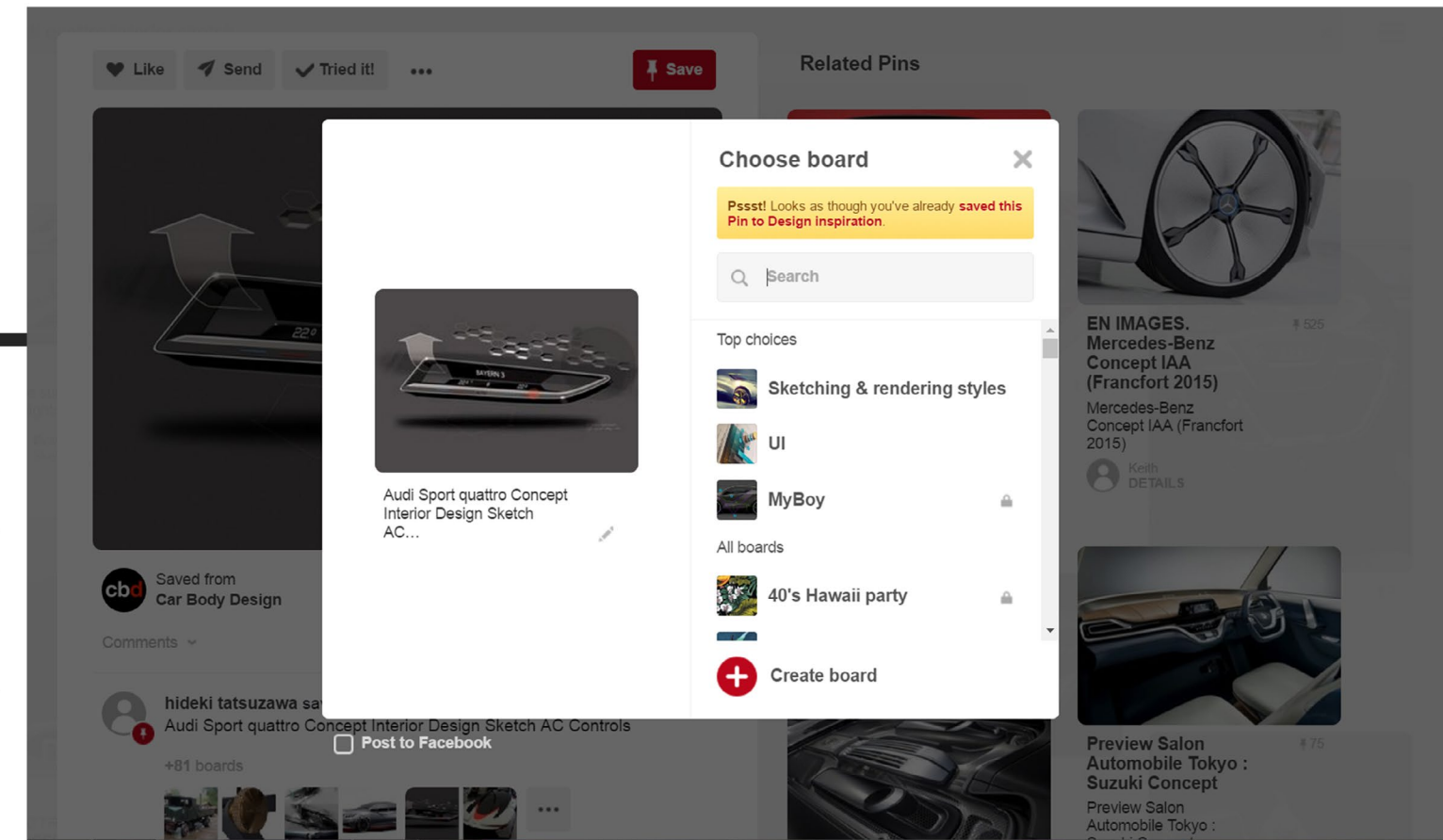
Related Pins are recommended after choosing Pin. Related Pins' description/ or board includes similar description words.

CHOSEN PHOTO & RELATED PINS



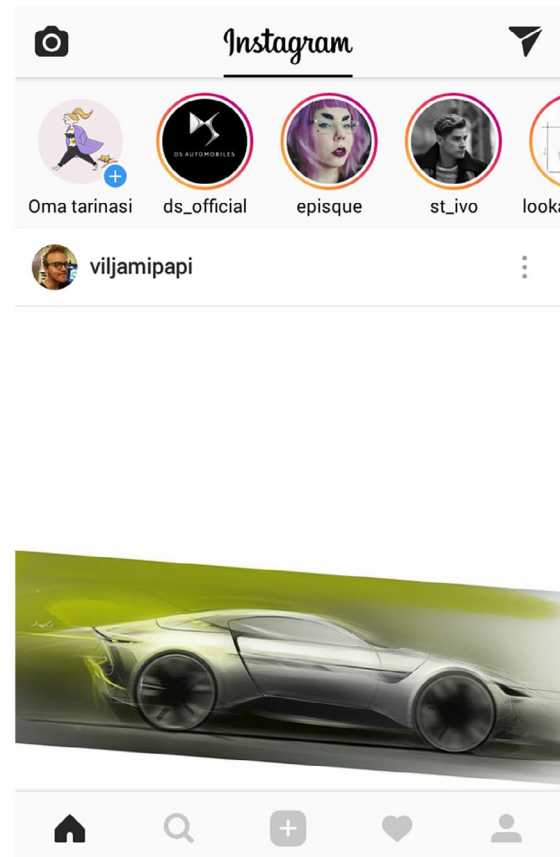
Pins can be organized to *Boards*. User can create multiple boards for many categories (for example Food, Design, Party, DIY.....)

SAVING PHOTO TO BOARD



Basics of Instagram

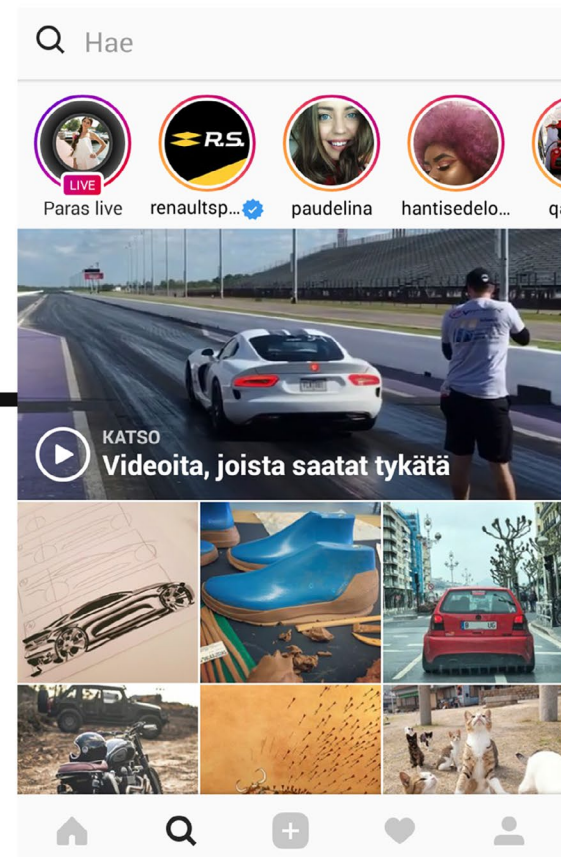
INSTAGRAM FRONT PAGE



Front page shows shared photos of who user is **following**.

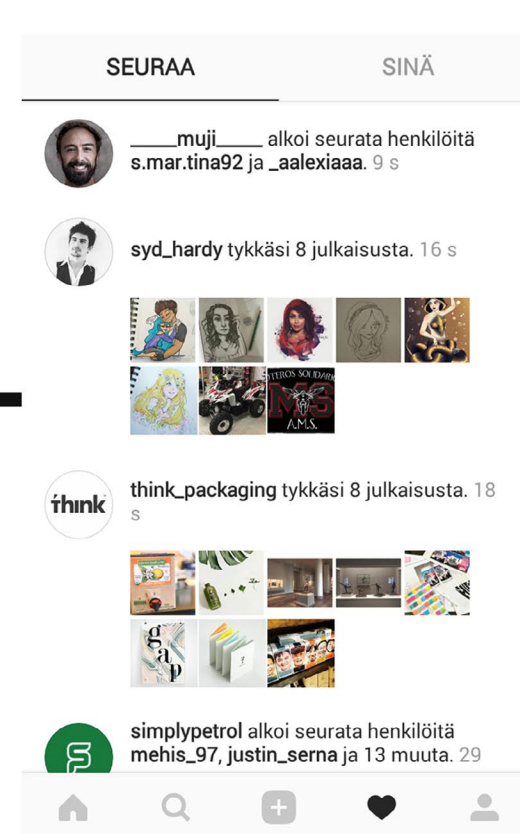
User can search for random photos and users which are selected based on user's **likes**.

SEARCH



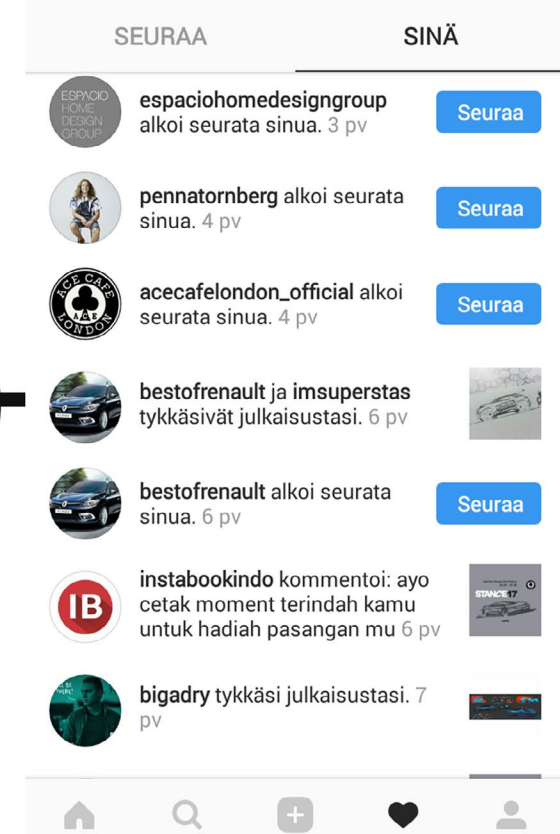
Activity of followed users.

ACTIVITY OF FOLLOWED USERS



Likes and follower notifications.

ACTIVITY ON USER'S PROFILE



User's profile.

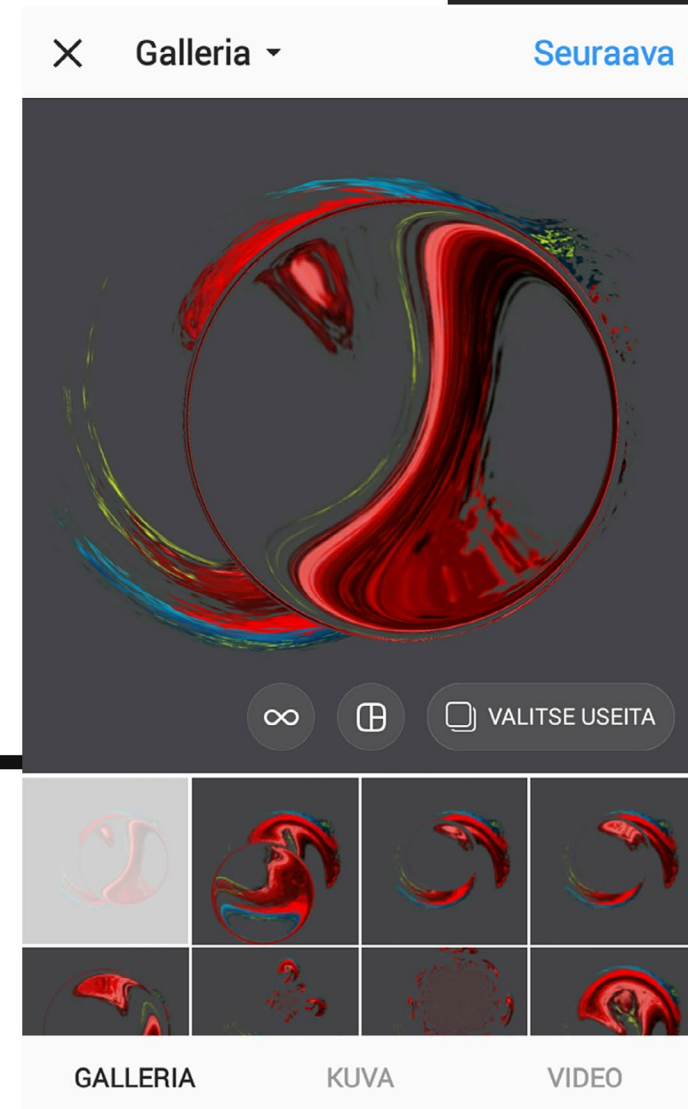
USER'S PROFILE



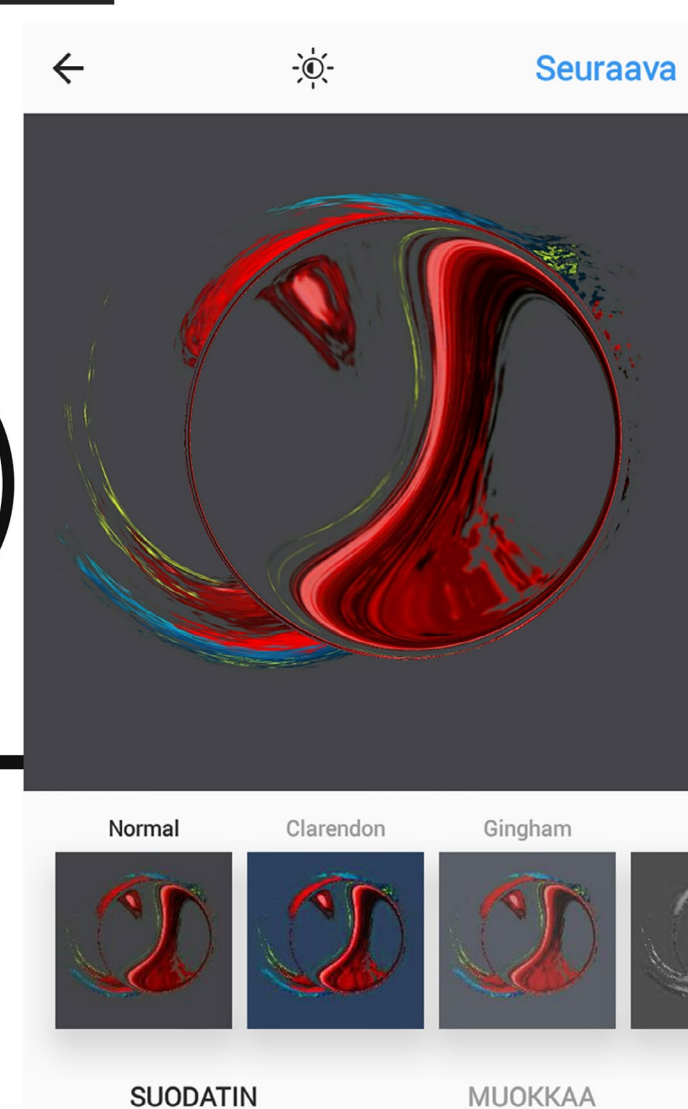
Follower's profile.

HOW TO UPLOAD PHOTOS

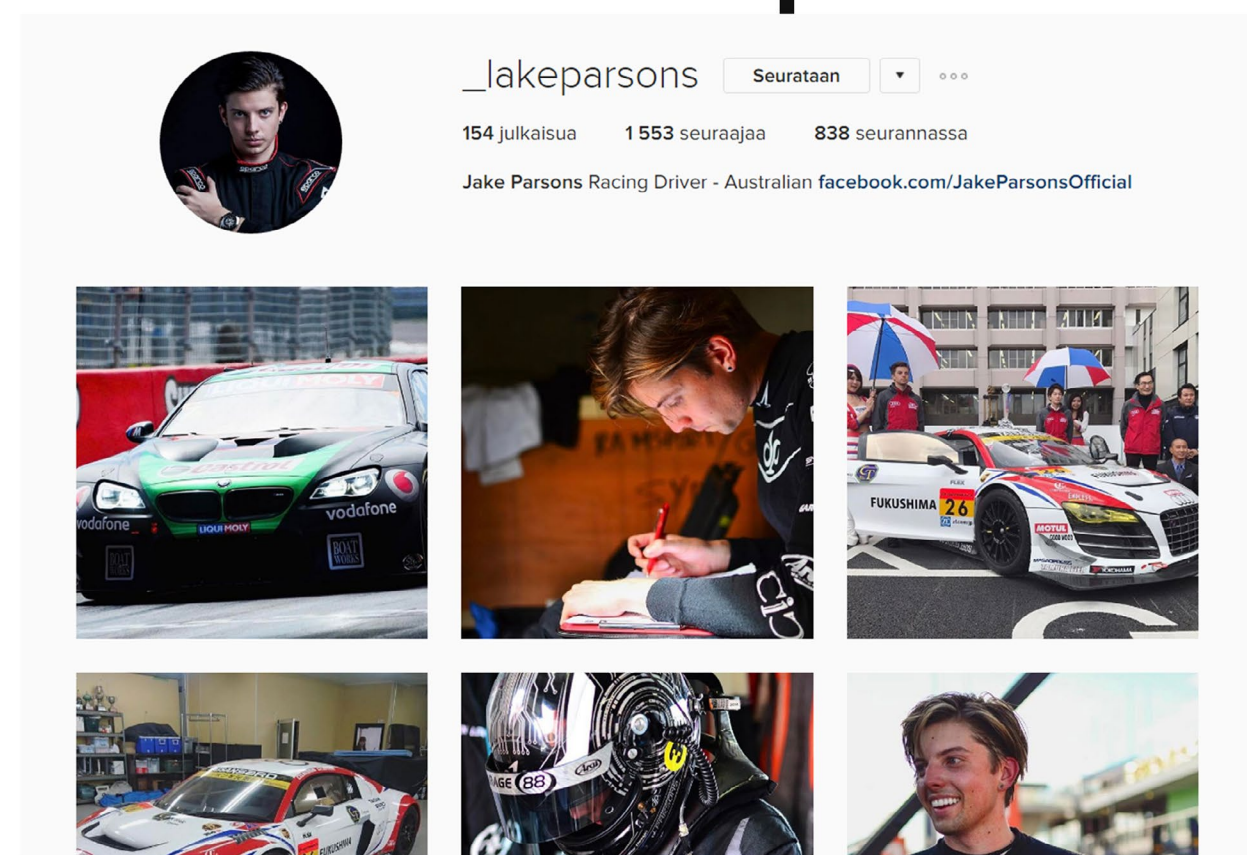
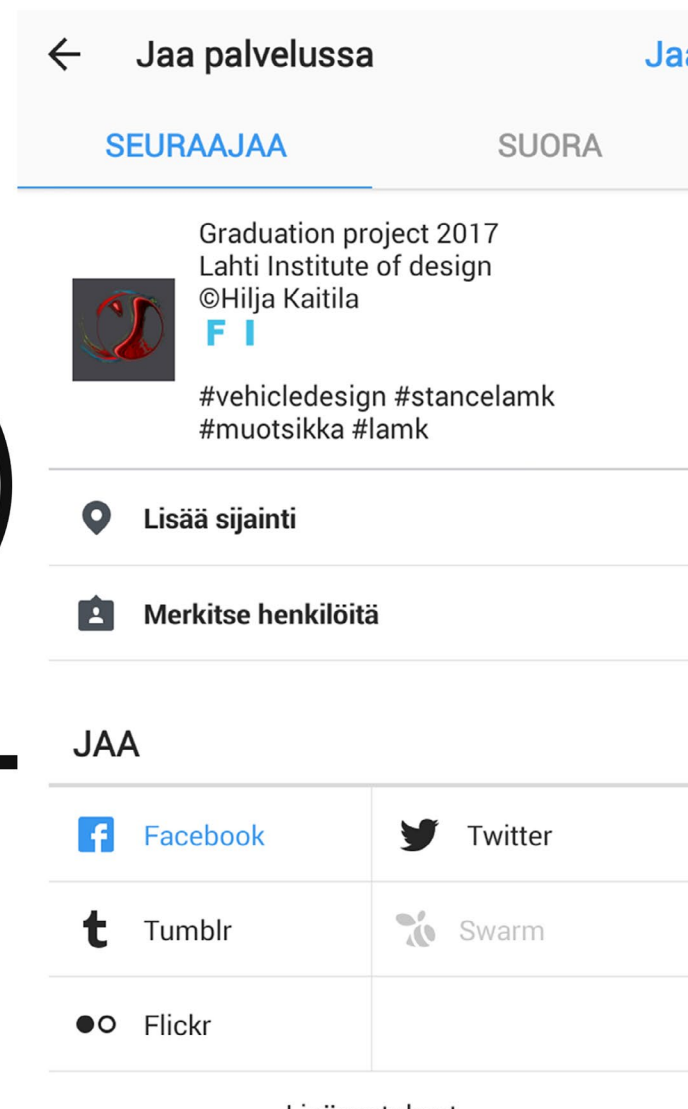
Choosing photos from gallery. Option for one photo or collage of two to ten photos.



Adjusting photos with filters, contrast, brightness, hue/saturation ect.



Adding caption, hashtags to label categories, location, persons and sharing to other apps.



Basics of Facebook

FACEBOOK FRONT PAGE

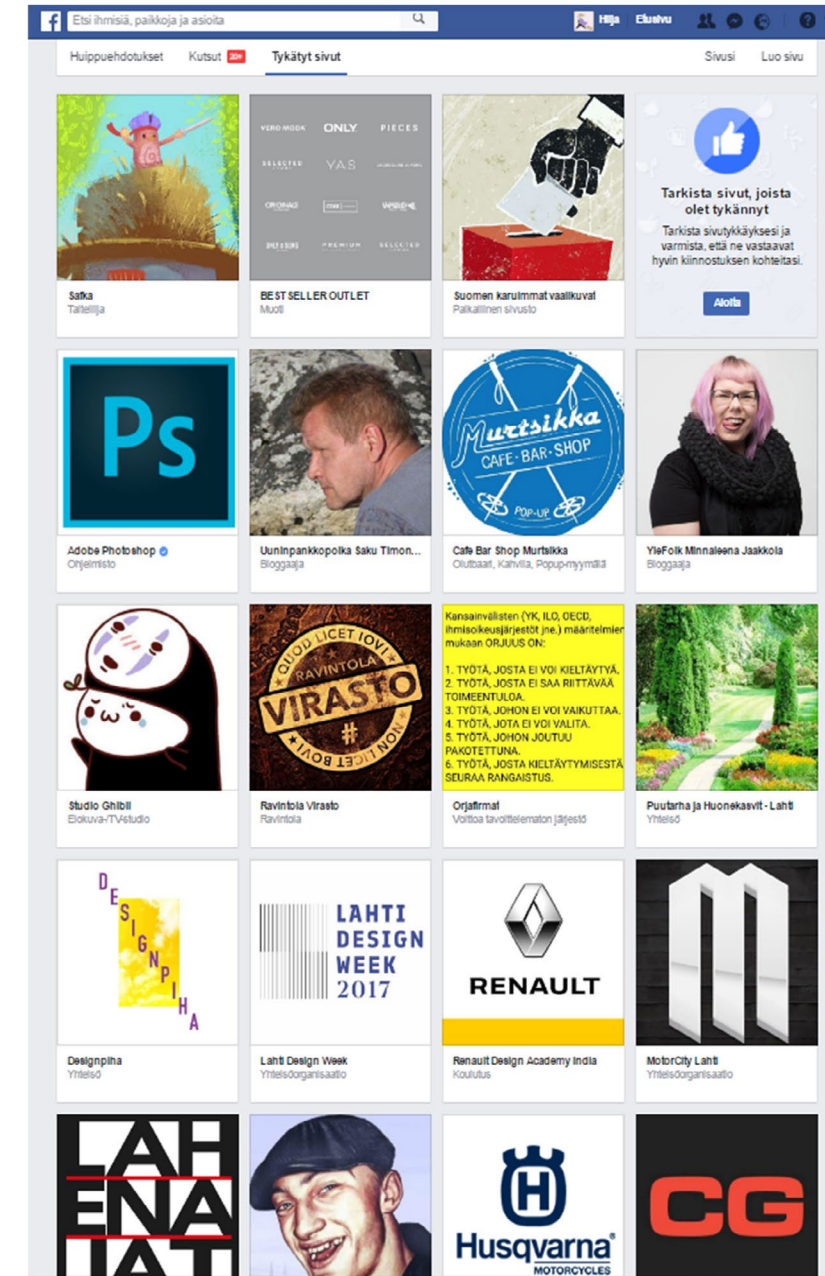
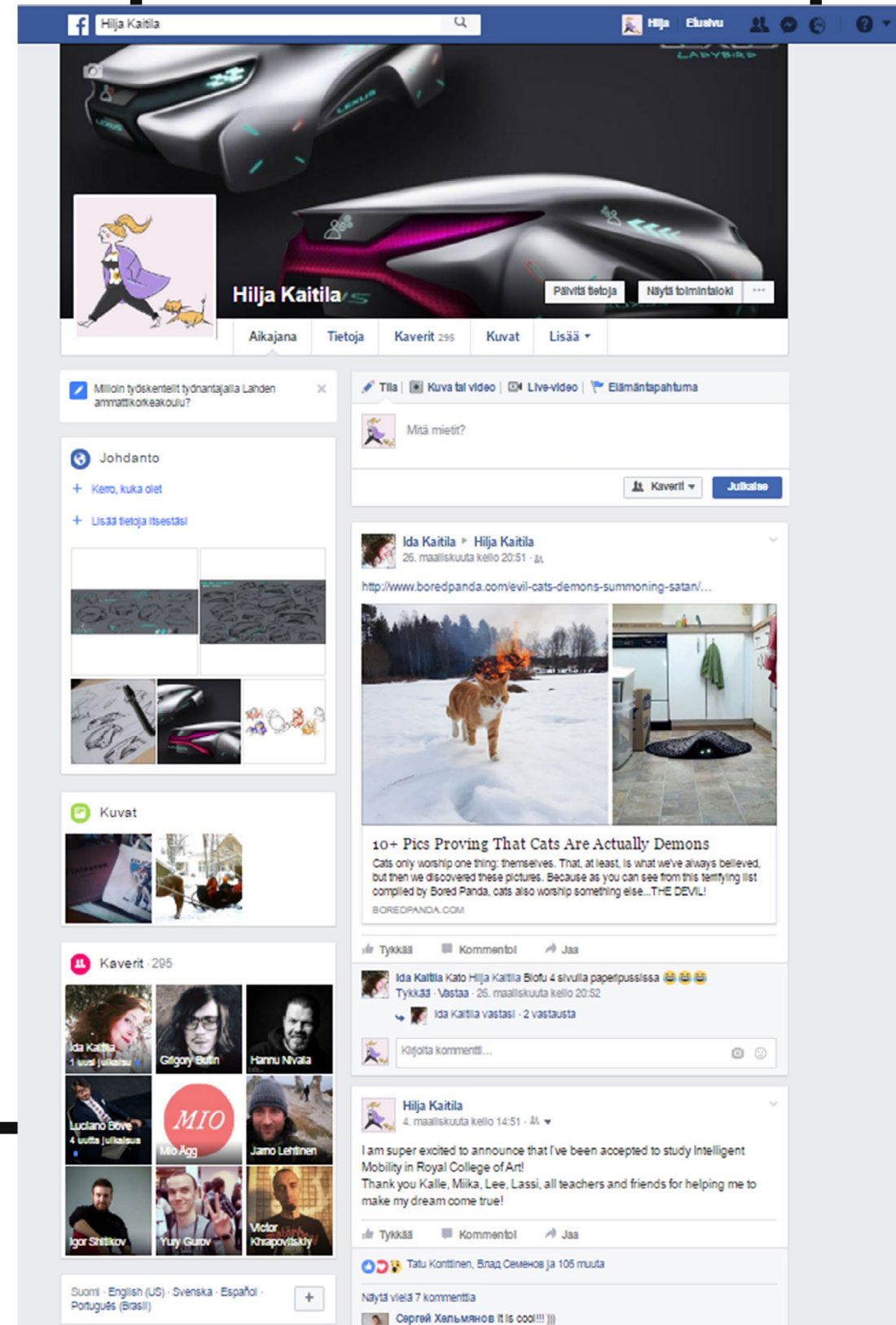


User can update current status here or add photos and videos.

Facebook front page is filled with stories **e.g. statuses** from user's friends, pages or people they follow and groups they are in. Facebook algorithm tracks down how much user interacts with these pages or users and suggest their post to front page.

From **profile** others can see user's photos, statuses, shared stories, timeline, friends and other personal information depending on personal **visibility settings**.

USER'S PROFILE

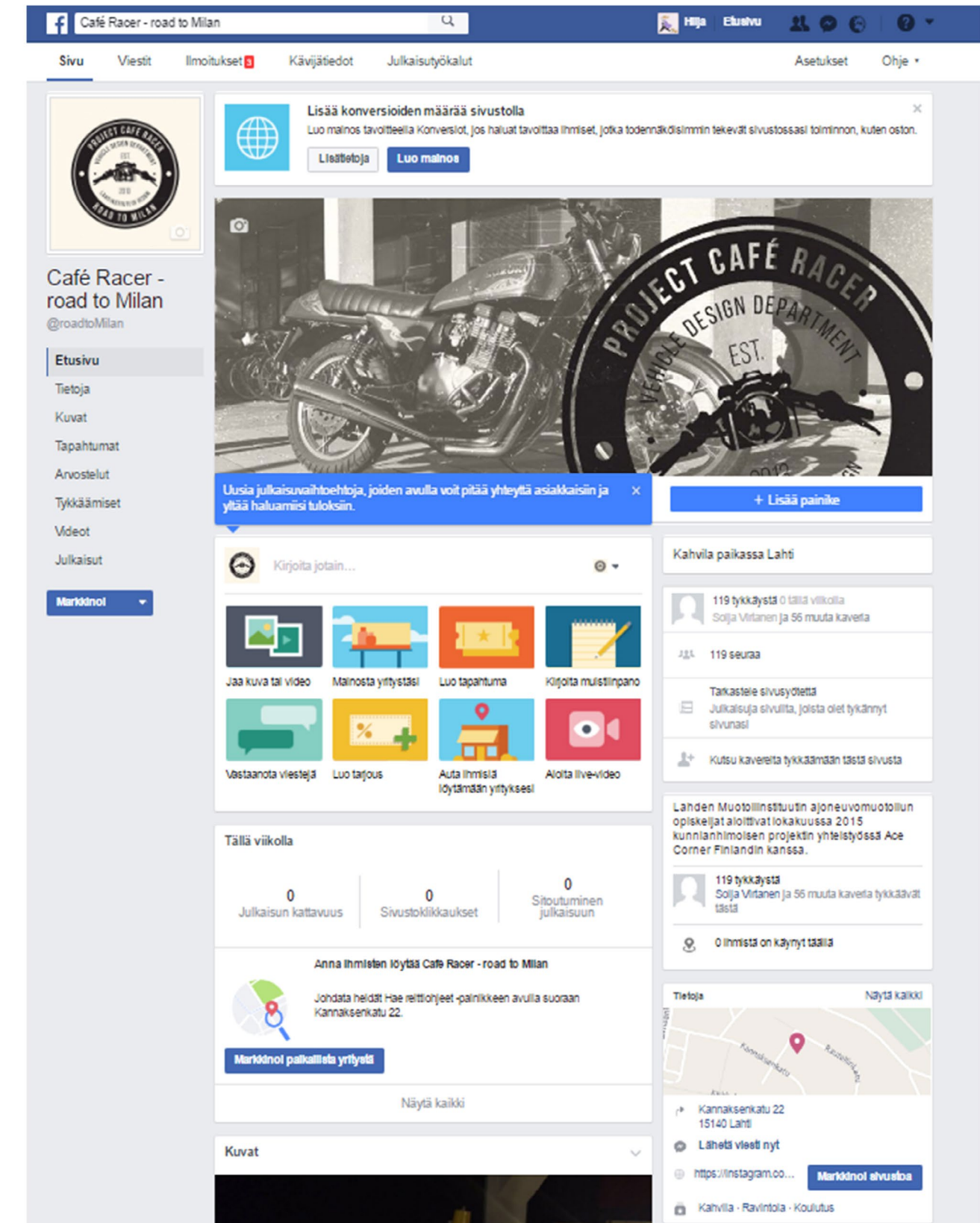


PAGES USER LIKE

User can browse pages, groups, friends and events but also play games or stream live video.

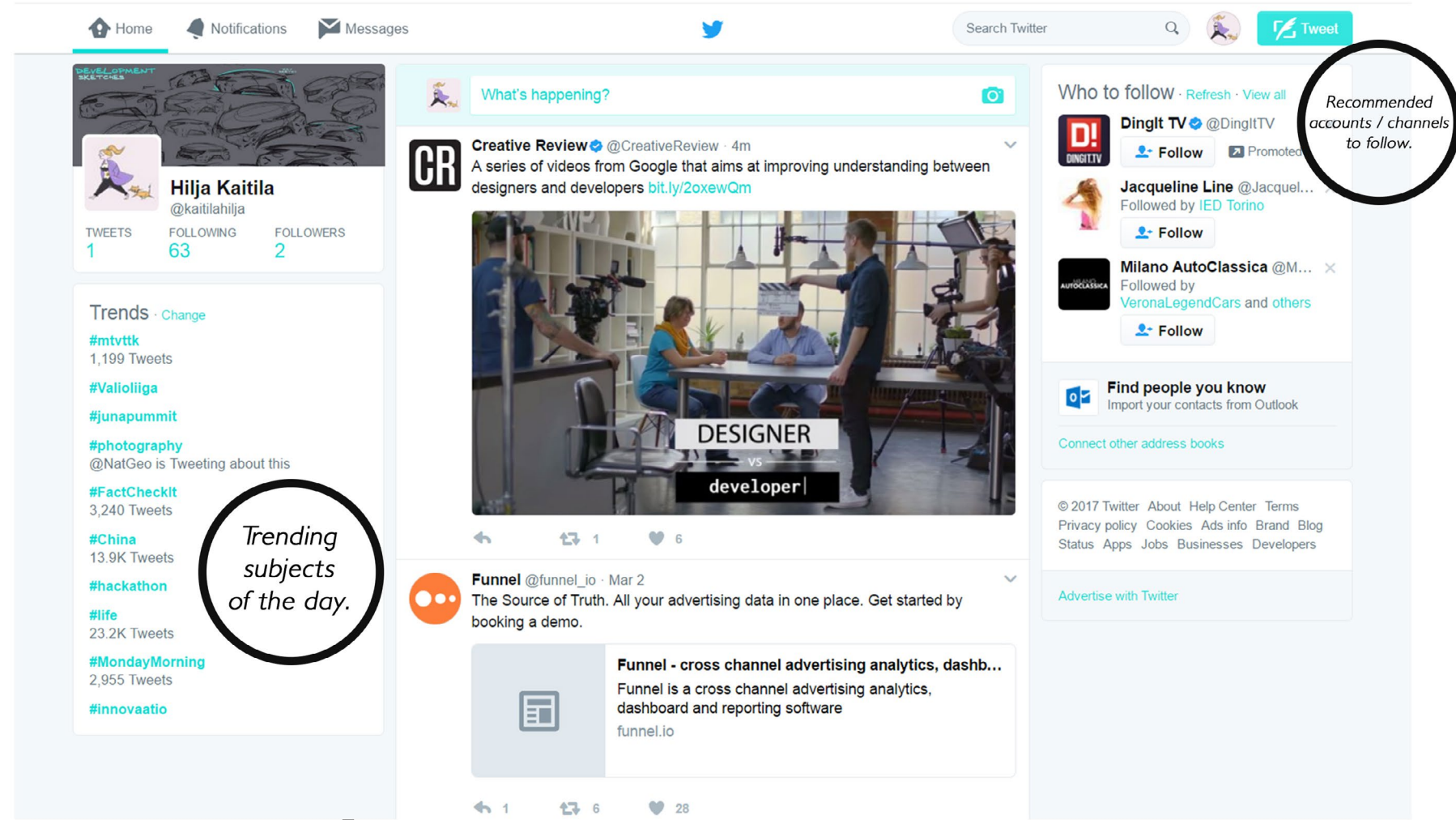
User can **create pages** for businesses, projects, products etc. and administer them.

USER CAN CREATE PAGES



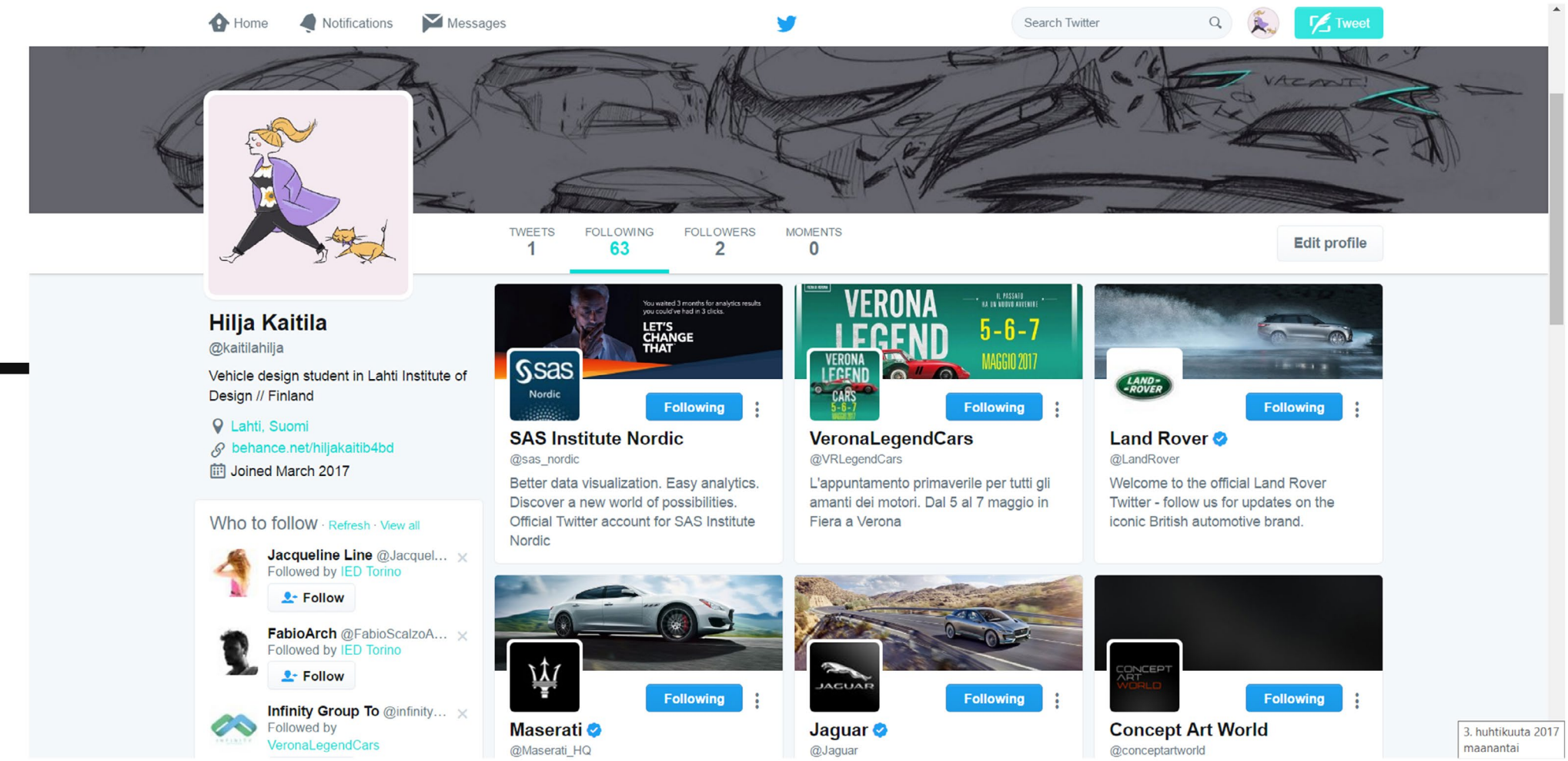
Basics of Twitter

TWITTER FRONT PAGE



Trending subjects of the day.

User can browse accounts they are following and find directly what they want to read.

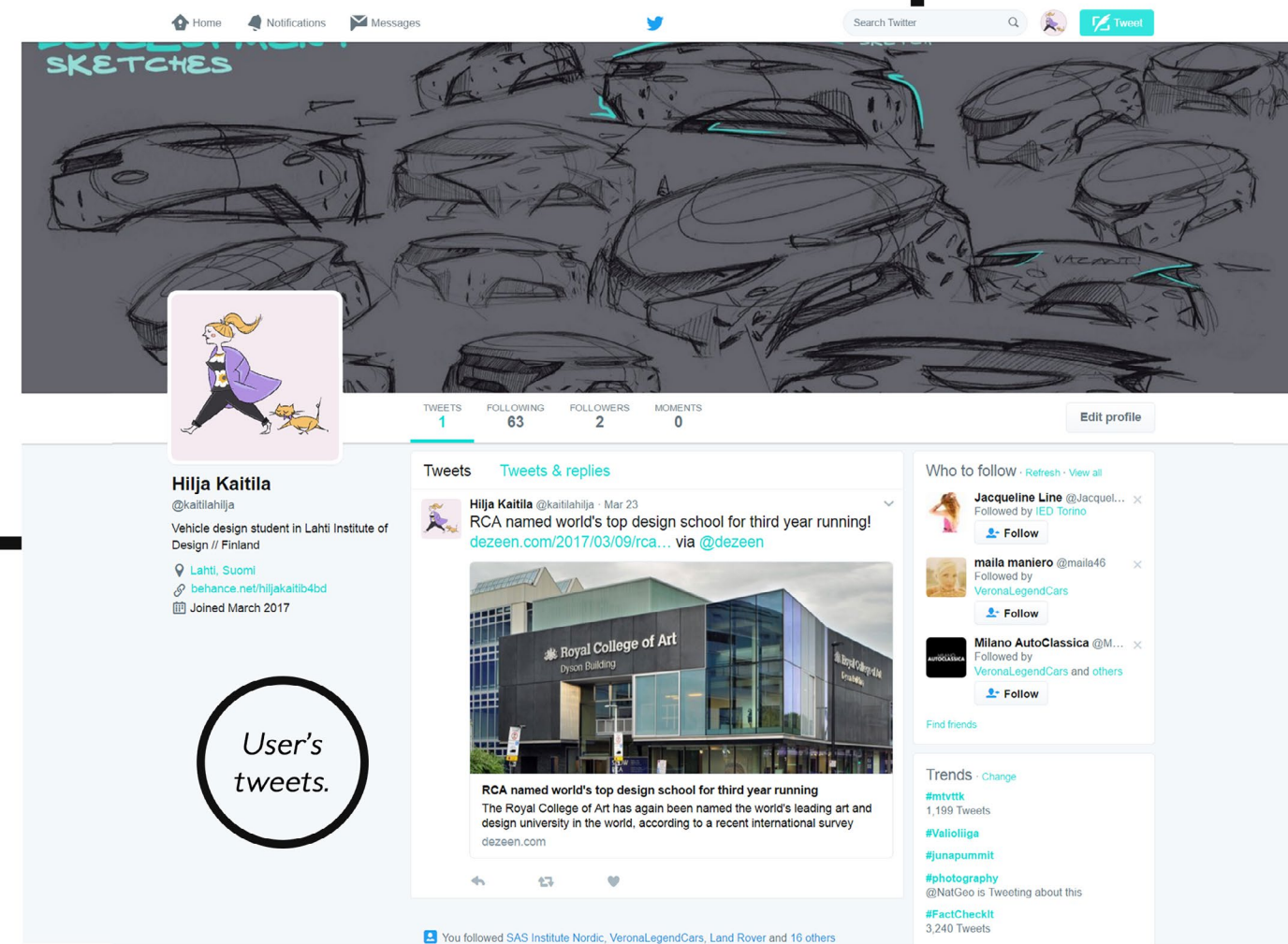


User can customize her profile in Twitter from colour of the background to contact information and company.

WHO USER IS FOLLOWING



USER'S PROFILE



Twitter recommends stories, which are called tweets. Recommendations can be related to hashtags (#) user is using (hashtags are used to label the content of the story e.g. #design) or field of interest and tweets of followers or who user is following.

2.4 Algorithms in design

There are several examples of use of algorithms in design. In automotive design algorithms are mostly used to create graphics or surfaces. One commonly used program is Grasshopper which is algorithmic modeling tool for Rhinoceros. Grasshopper uses generative algorithms and is a graphical algorithm editor. For example Faraday Future's FF91 electric car and concept cars such as Renault Trezor, Chrysler Portal and BMW Vision Next 100 have graphics and surfaces that are generated with Grasshopper. MHOX uses computer algorithms to design medical devices and fashion pieces such as Carapace mask. MHOX's co-founder Alessandro Zomparelli explains how 3D printing

and 3D generating allows designers to push the limits for new innovations and give functionally and visually desirable options. He also states of the future of designing and interacting with more conscious programs "You have to program with behaviour with program but you have also active interaction role with these rules... You have to know your material, you have to explore it. And using these digital tools, I think, it's quite similar to...so it's a wide landscape to explore to designers."

The auditorium of Herzog and De Meuron's concert hall Elbphilharmonie in Hamburg, Germany, was created with algorithms.

Algorithms have also been used to design motorcycle parts, typefaces, chairs and bridges (see references 2.4.6-2.4.9).



FARADAY FUTURE FF91



MHOX CARAPACE



MHOX ORTHOSE



ELBPHILHARMONIE, HAMBURG



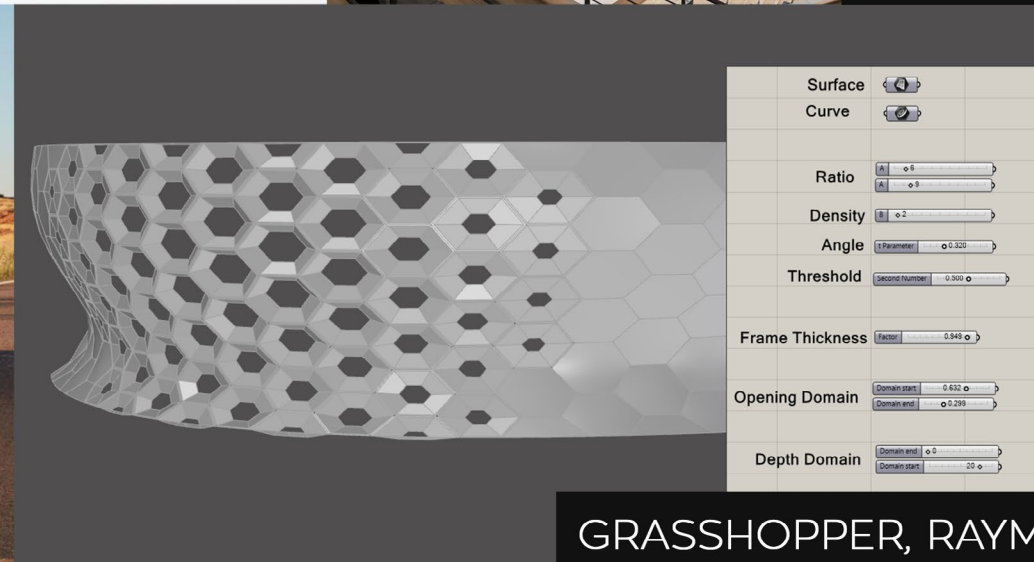
BMW VISION NEXT 100



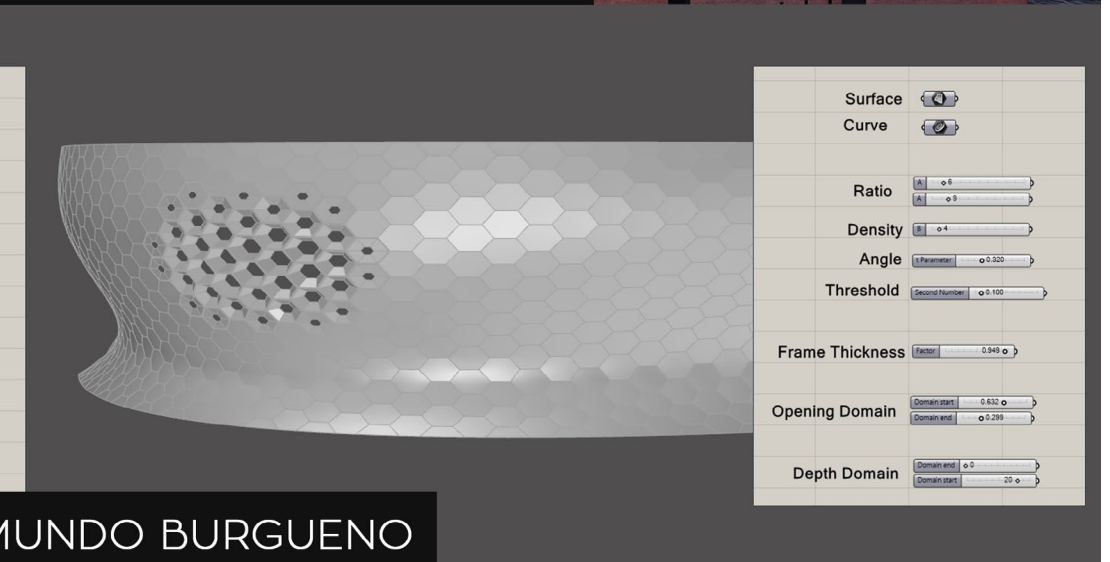
CHRYSLER PORTAL



RENAULT TREZOR



GRASSHOPPER, RAYMUNDO BURGUEÑO



3. Lada

3.1 Introduction

Lada is a Russian car brand of vehicle manufacturer AvtoVAZ. Lada was founded in 1966 and was previously known under name 'Zhiguli' which means river boats that are used in river Volga. The logo of the brand also represents this river sailing ship which is a form of Viking longboat know as a lad'ya. In russian language word 'Lada' means 'beloved'. Then again in slavic mythology Lada is a goddess of love, beauty, youth and harmony.

During 1970's and 80's Lada cars became popular in Russia, Eastern Europe and Finland as they were cheap, easily maintained and durable in challenging conditions.

Lada's most iconic models are VAZ2101 know as Lada 1200, Lada Niva 4x4 and Lada Samara.

Lada 1200 is based on Fiat 124 with minor changes in under the frame. It had new motor, bumpers and wheels, thickened body and strengthened floor.

Lada has tested Europe's most demanding markets with 1600 Vestas sold in Germany in 2016, but Head of AvtoVAZ, Nicolas Maure, believes that the number can be increased to 2000 in 2017 (*Dpa International Feb. 08 2017*). Company's main export targets are former Soviet republics. "Later we'll want to expand to the Middle East, Africa and Latin America," Maure says.

In October 2016 Renault owns over 70% of Avtovaz stakes (*fortune.com*).

3.2 Reputation

Lada has enduring reputation as a poor quality car as it is very simple with its design and engineering, but also as it is known as a cheap car. In Finland Lada's negative reputation is commonly a result of prejudice tells Mika Suomalainen chairman of Lada club Finland in MTV3 news.

Ladas, especially Lada1200, has been pictured as lousy, political

vehicles but they were also known as a good cars with easy tricks to fix and maintain along with Ladas were incredibly durable on Russia's bumpy roads and challenging weather which have made them popular amongst whole generations. Lada's long-standing reputation as inferior quality car holds up even though company's attempt to renew Lada's brand image. Nicolas Maure says, that today's Ladas are a vast improvement on their predecessors. "It is a completely normal car for a very good price," he says. "We are striving to build more competitive, better-quality and more cost-efficient cars," he adds. Although brand's old reputation still lives on and it is hard to dispose, changes has transpired through social media. Underhood, a web site that collects company reputation analysis from multiple online sources, scored Lada's reputation score with overall 5,3 and the tone of voice by audience is listed as "good" which is a positive sign telling that Lada connects well with its users. Sport, 2017 and world were listed as similar words with Lada, when top words used by audience were when, good and beautiful.



3.3 Brand

A good brand image reflects the experience with the product and makes it unique. A strong brand consists from companys' history, values, reputation, message, products and relations with the customer.

Six years ago Lada started creating itself new, modern brand image with XRay concept. 1 & 2, Vesta and XCode. The logo of the brand went through minor changes and was modernised to correspond todays style. Lada kept the same logic of products, but wants the brand to attract young people with young and energetic design. Lada is described as affordable, user friendly, energetic, contraste and bold by Lada design studio.

Ladas' brand strategy builds to four main categories, to product planning which defines what kind of product is aimed to certain market, to design that defines product through studying and functions (for example showcar), engineering and marketing that defines communication strategy.

Lada has embraced a dynamic X-shape to its designs which is strong characteristics of Lada's design language. Fresh colours and carefully placed details such as the x-headlights in XCode concept makes Lada modern, stylish and easy to approach to younger generation. As a mass market brand Lada encourages young customers with affordable price range.

3.4 Lada design studio

Lada has two design studios, one in Togliatti where development, engineering and factory are. Models are also milled and developed physically in Togliatti. The design studio is more development oriented and engages 160 persons. Second studio, smaller one with 12 persons, is in Moscow. Most of the creative side of the brand is coming from Moscow studio such as advanced, product studies and strategies, proportional studies, design competition, etc. Moscow studio was opened in 2012 to challenge the team in Togliatti and to attract talents in inspiring city.

AFFORDABLE



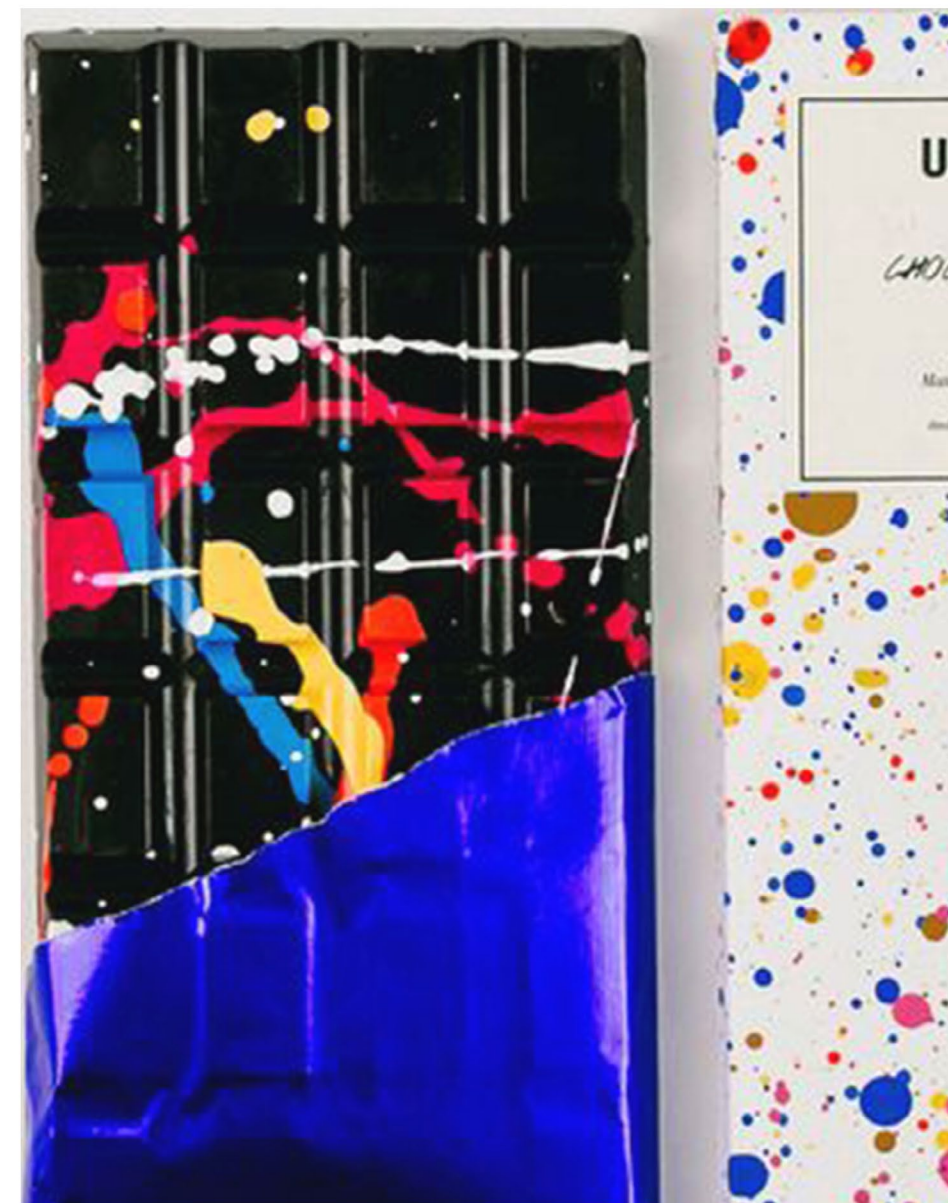
Wacom Intuos Art

BOLD



Vogue October 2015

CONTRASTE



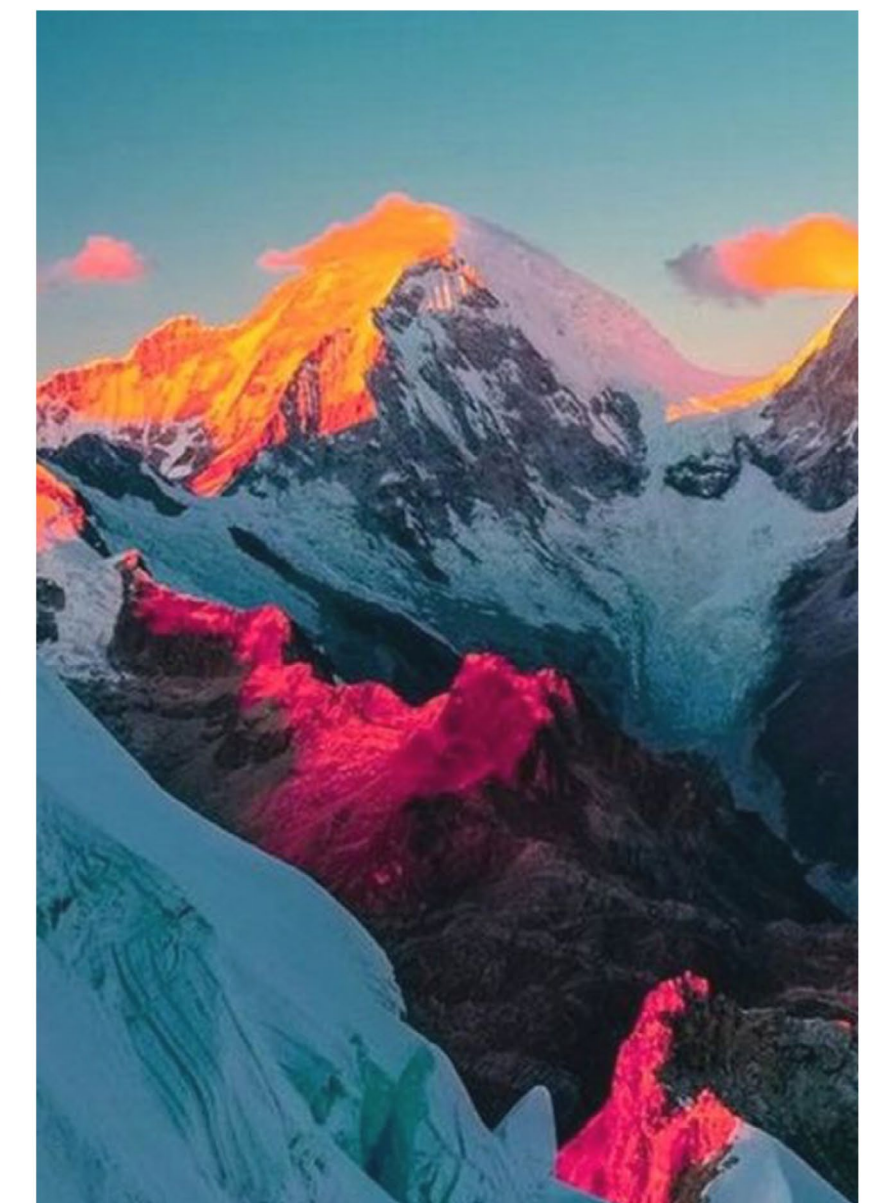
Unelefante Pollock chocolate bar 02

USER FRIENDLY



Love is complicated, IKEA is simple

ENERGETIC



Coloring the mountains

LADA DESIGN IDENTITY

VESTA2015



MORE ABSTRACT
XSHAPE

SLEEKER LINES



XCODE2017

STYLIZED **X**
REPEATED IN THE BODY



XSHAPED
FRONT LIGHTS



4. Future

4.1 Mobility

Fully autonomous cars will enter the market by 2020 to 2030 (*recode.net*). Which leads markets to develop alternatives to time spend travelling as humans do not have to drive the cars anymore. Car brands need to start offering users different experiences instead of today's driving experience or accessories that make driving easier. Experiences that make people, and especially younger generation, to get excited of cars.

4.2 Technology

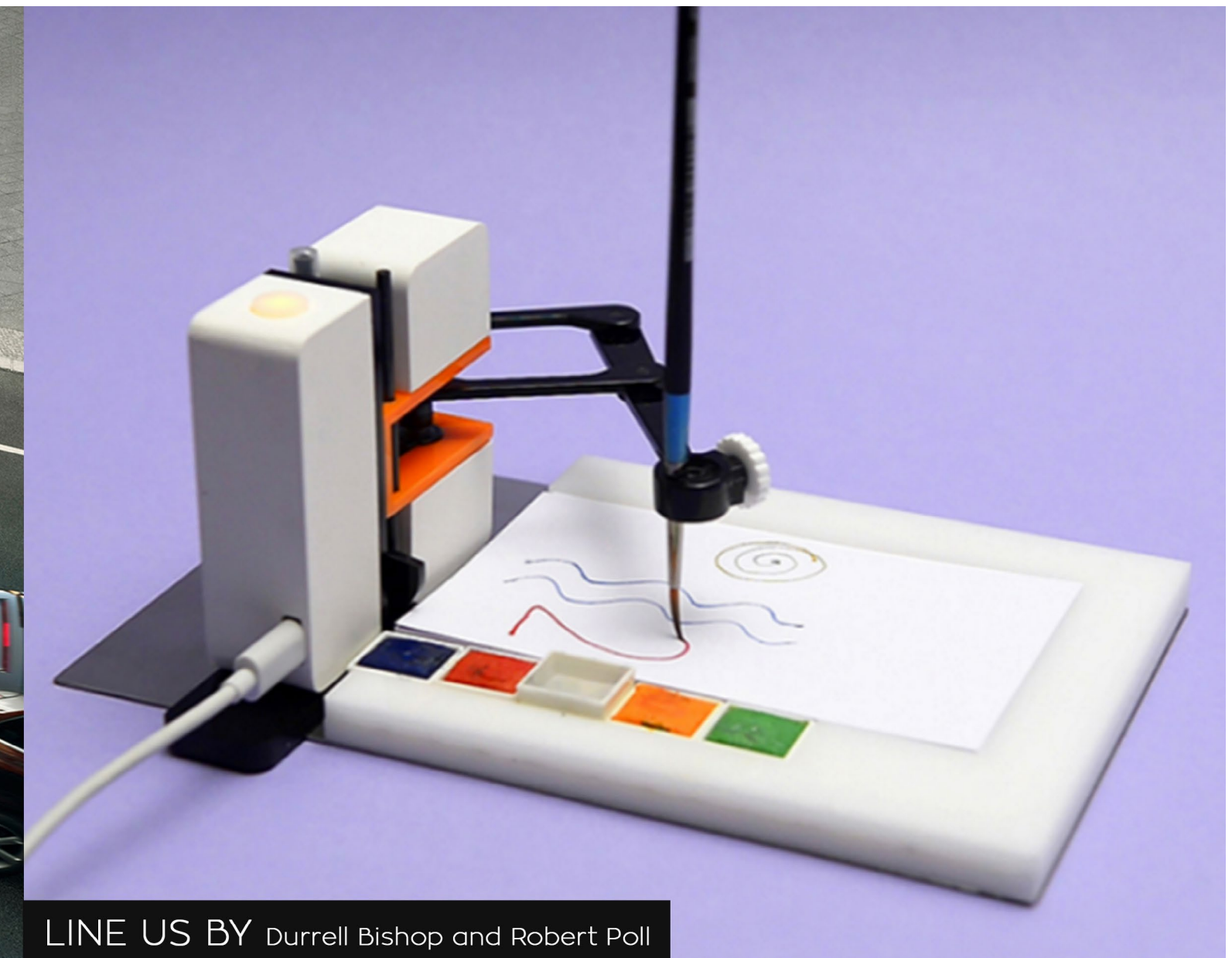
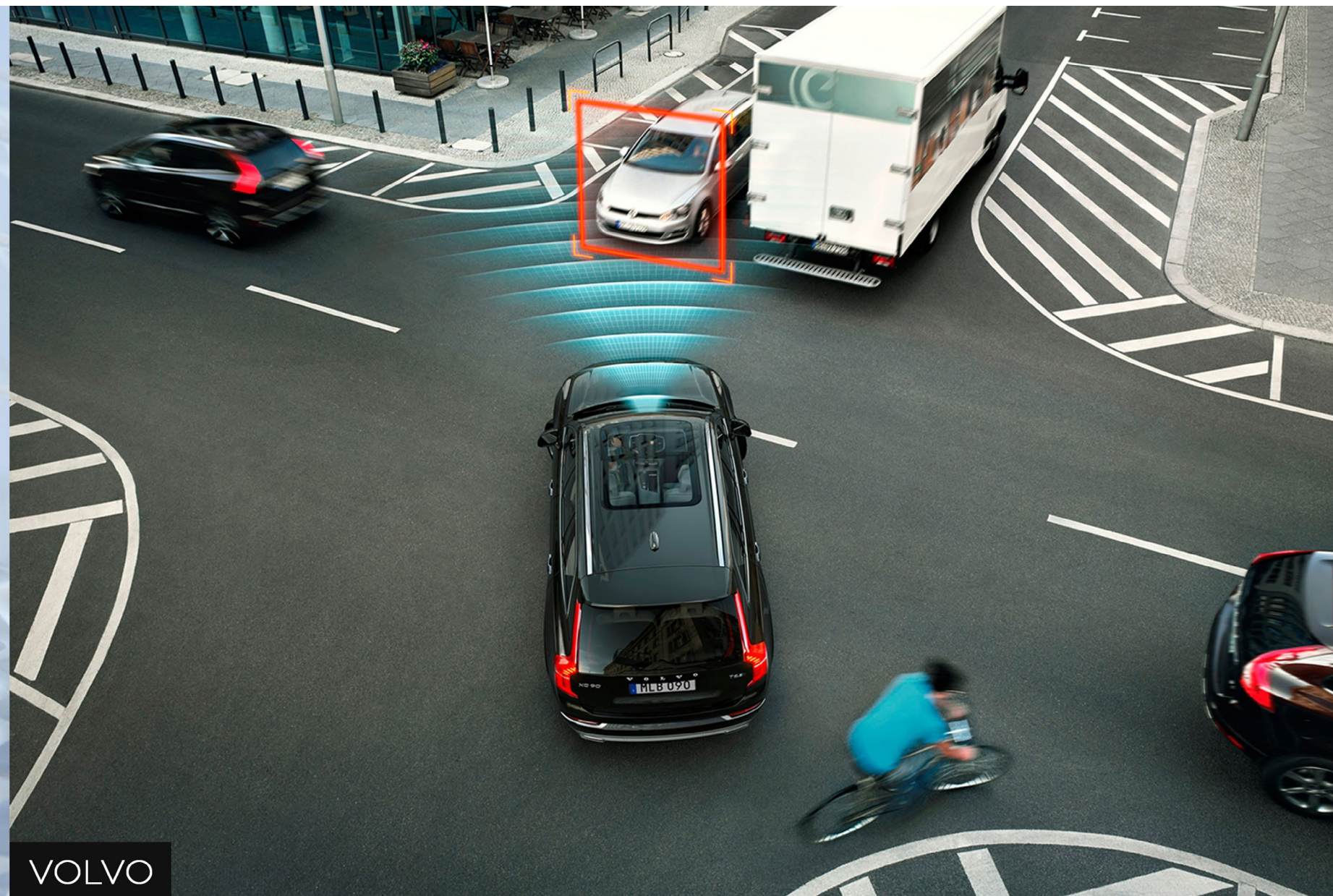
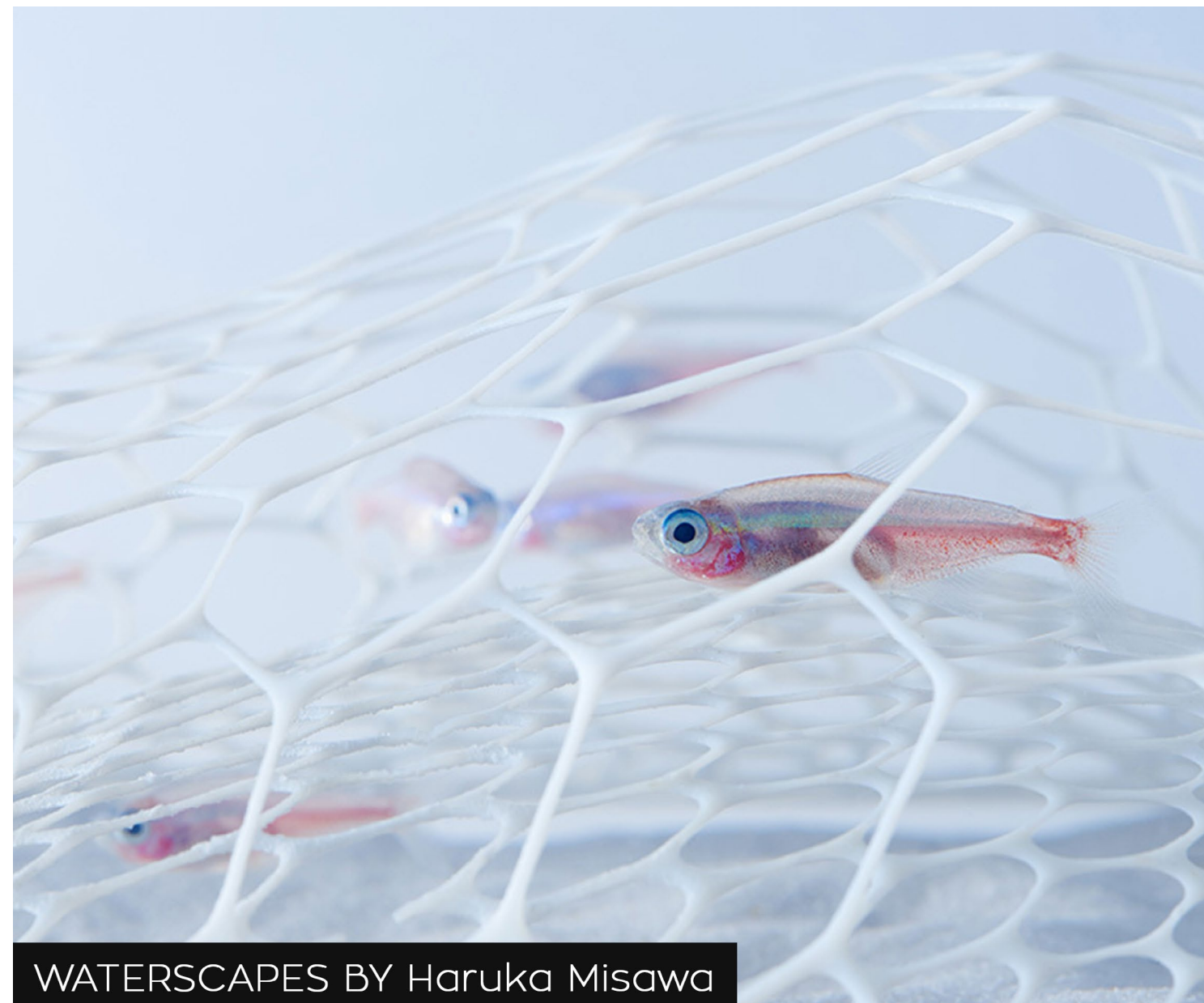
Massive development in technology allows manufacturers and designers create products with less cost. Ford Motor Company has started testing 3D printing on large scale parts such as spoilers. The pilot project is designed to find out how Ford might be able to use 3D printing to make large parts, tooling and components at relatively small volumes, where it normally wouldn't make sense to even bother because of how much it would cost (*techcrunch.com*).

Robotics and A.I. will be used more commonly as part of processing and creating products. There are already wide range of robotics that are created to do same things same way as humans. For example Boston Dynamics builds robots with remarkable mobility, agility, dexterity and speed. Using A.I. based

design and exploiting A.I. as part of design process will be more common and designers will find more ways to benefit and to develop it.

4.3 Designers function

There's always risk that A.I. and machines will outrun humans as designers but it's unlike to happen completely. For example formerly clay models were modeled by hands, but nowadays there's milling machines that will do all the base work and therefor allows modelers to focus on the creative side and craftsmanship. In the end of the design process the designer, chooses the concept with his or hers intuition and that's the thing that makes designer a good designer as Vikenty Gryaznov mentioned in his lecture in Moscow (autumn 2016).

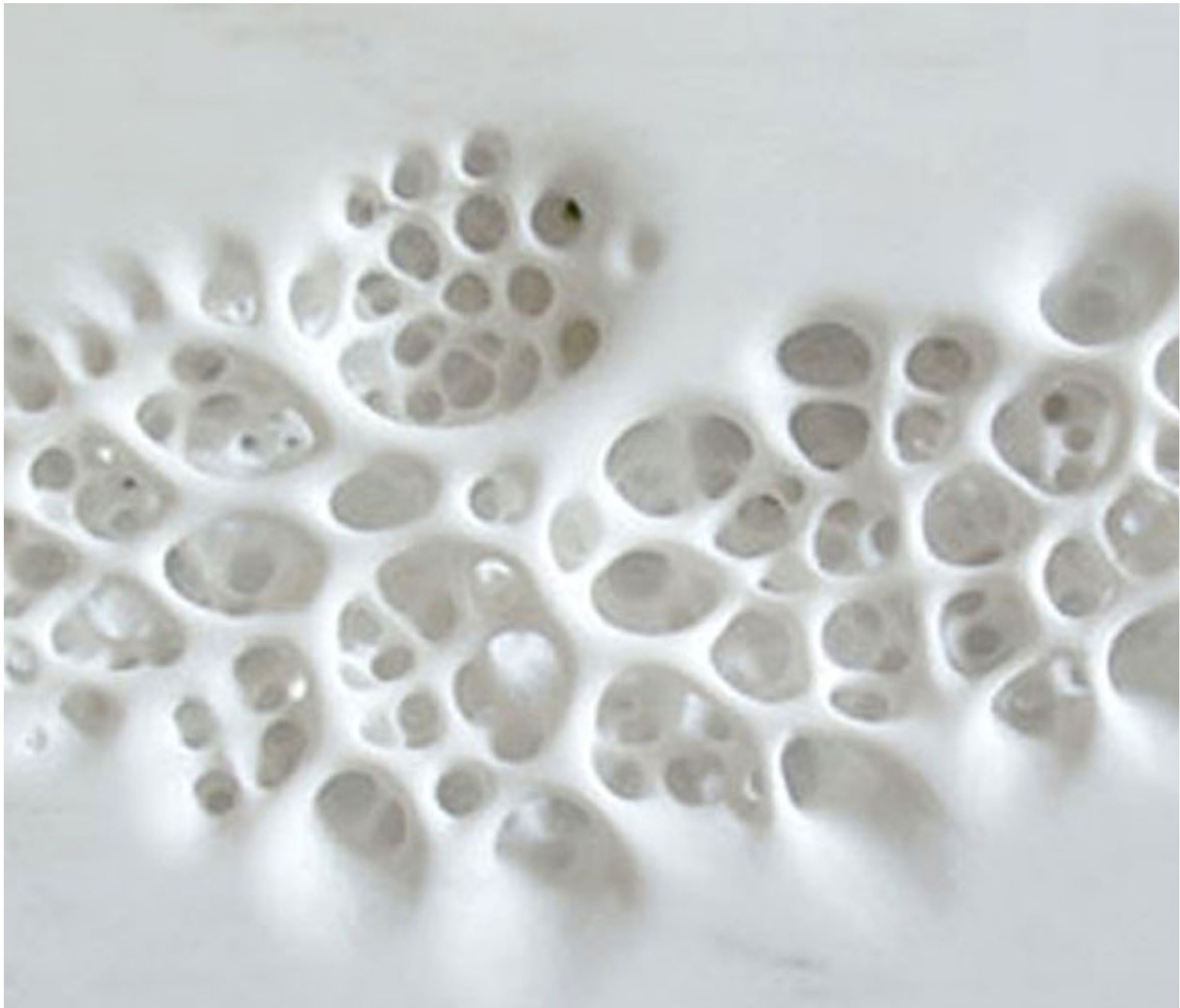


5. Goals & definition

5.1 Assignment

Initial assignment is to design a future model for Lada using algorithm based process. The aim is to create concept that promotes the brand, telling that the brand will be more attractive than the competitors in the future by bringing something unique, different, to find new kind of emotions by using algorithms and A.I. A concept that will give a positive message and a positive use of the technology.

TECHNOLOGY



Kukla1

EMOTIONS



Fest poster

UNIQUENESS



Lego man

BRAND IMAGE



Lada Xcode

5.2 Goals for concept

The goal is to strengthen Lada's existing new brand image and create perspective to where the brand is heading in the future. Concept needs to combine future way of designing and artificial intelligence to a comprehensive body, but also to explain how this particular piece is designed and the philosophy behind it.

LADA 2016
CONCEPT
HUMANS AS DESIGNERS

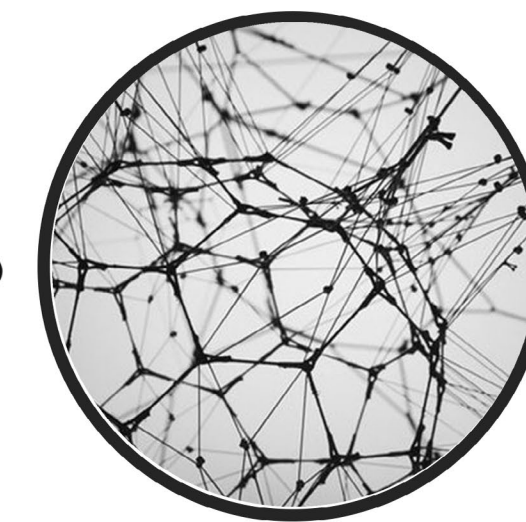


LADA 2030
CONCEPT
A.I + HUMANS


DESIGN



FUTURE
TECHNOLOGY
A.I. AS DESIGNER

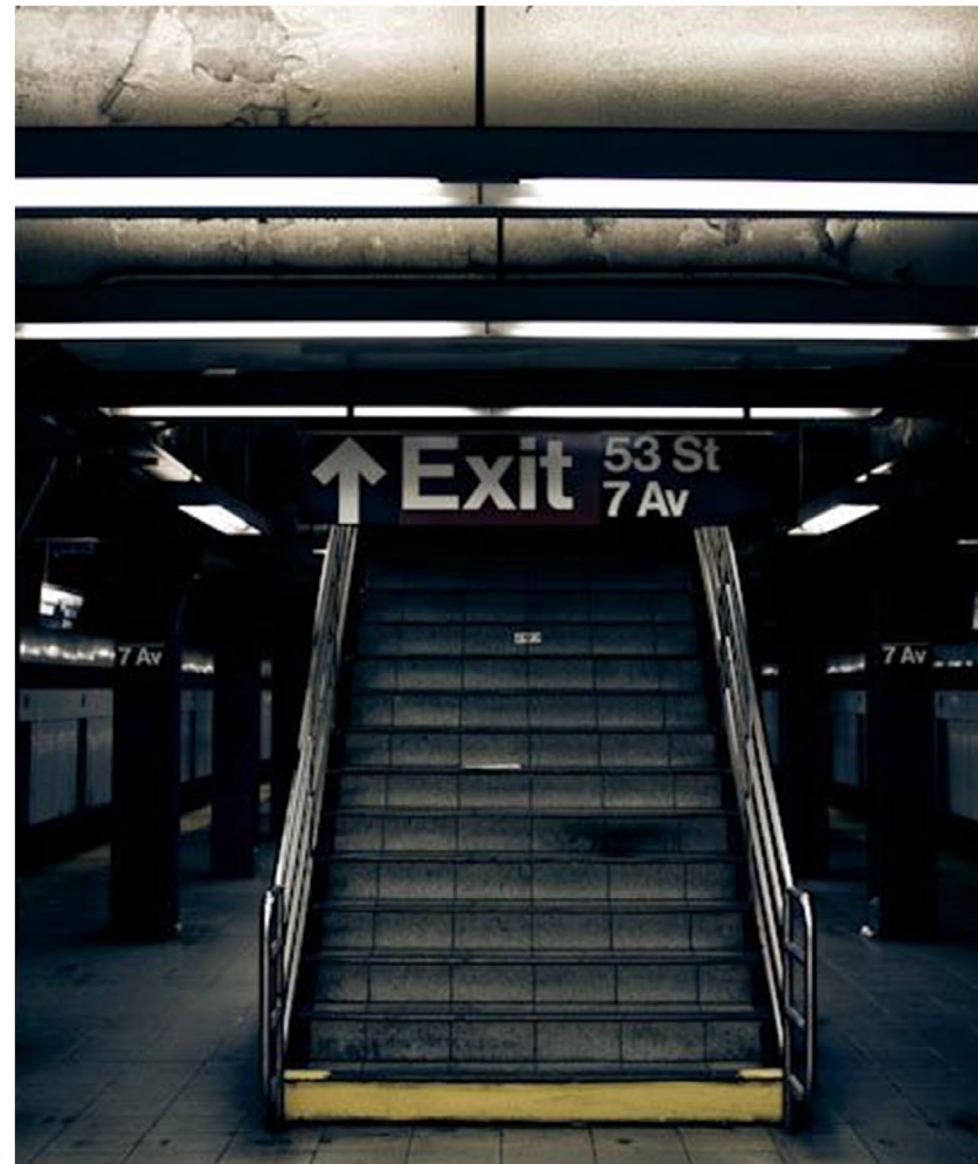


5.3 Goals for user

Concept needs to respond to user's aspirations and desires by using visual data collected from user's social media feeds, what she likes, shares and comments. After data is collected its visual language will be transferred to a concept.



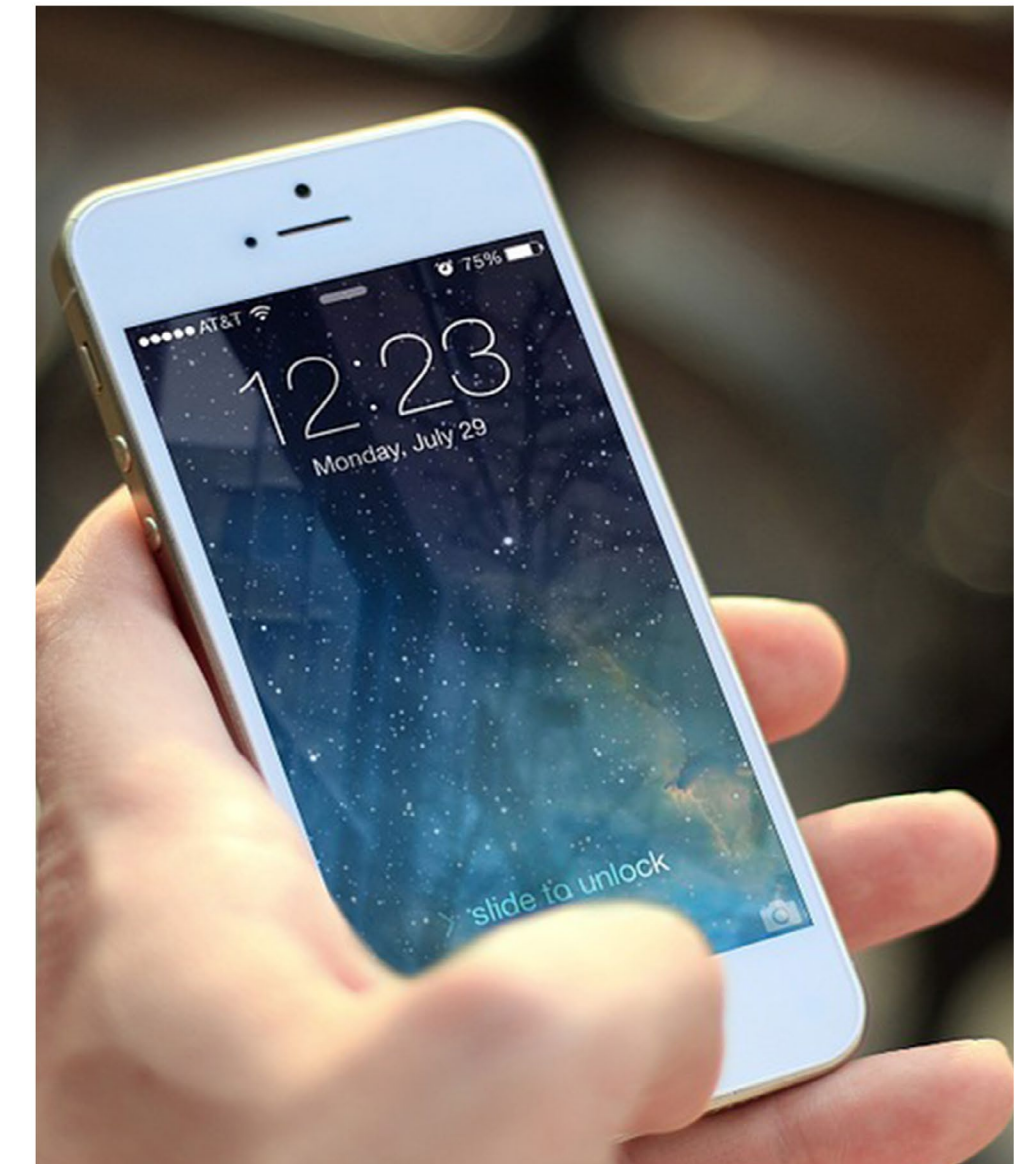
Snowboarder 01



NYC subway



Girl

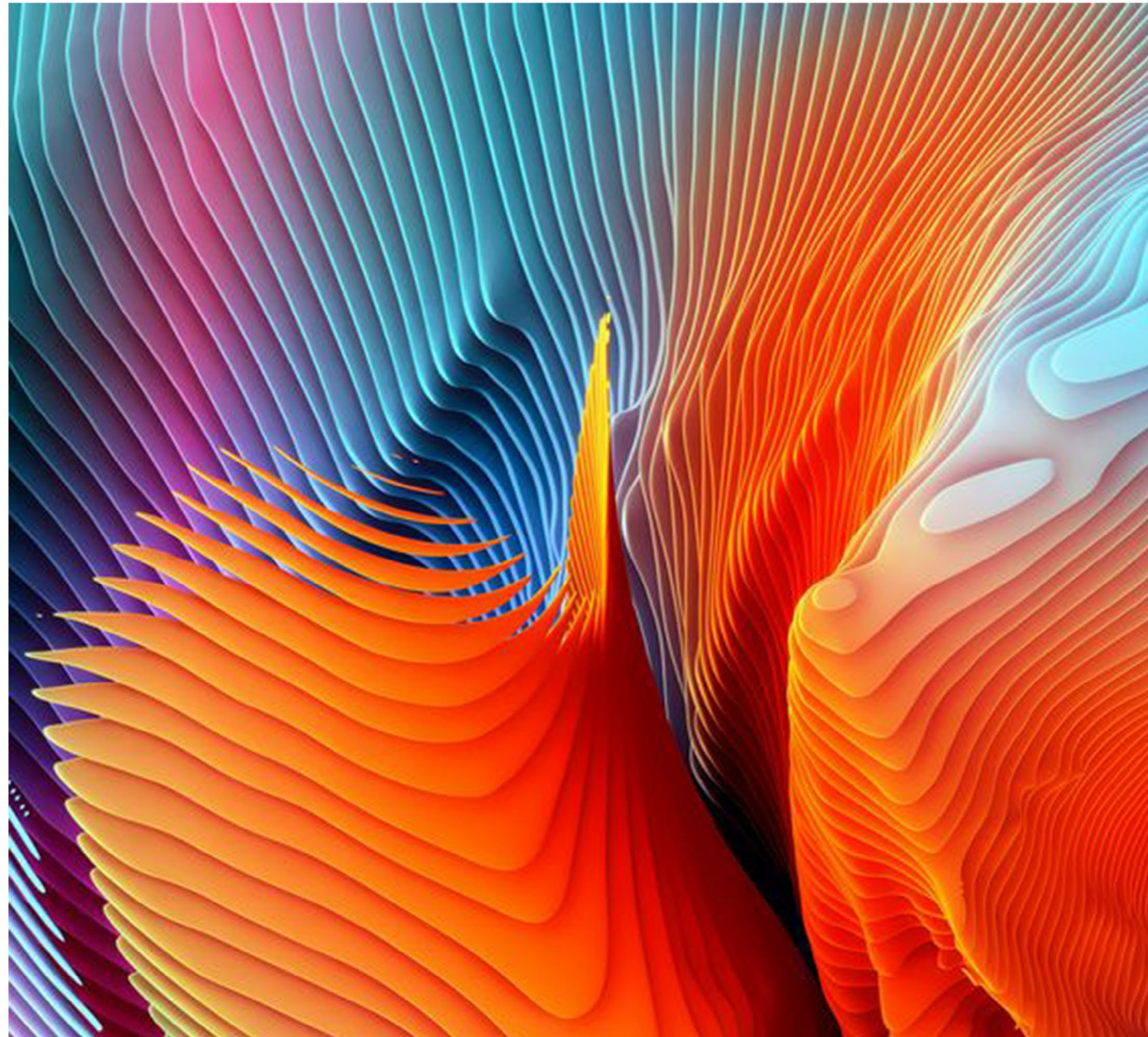


Iphone

5.4 Visual goals

Visual goal is to show how user's vehicle could look like in the future depending on user's choices.

Concept will show how we can apply A.I. and human based design to a visually ingenious concept that matches both user's personal taste and Lada's design language. The importance is in showing through the process how user's visual data from social media can be transferred into directional concepts rather than having one complete design.



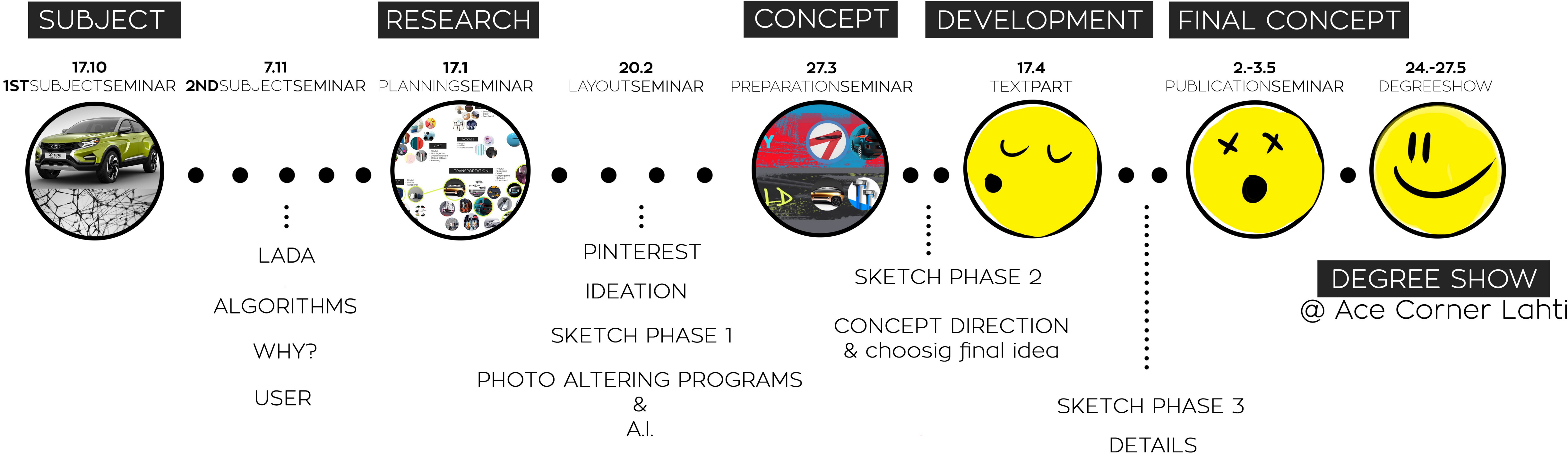
5.5 Definition

To develop a way to create a research for a process that uses algorithms and creates algorithm like processes where social media and photo altering programs are used as source. But also demonstrate the process with concept(s). Virtually the aim is to show one possible future scenario of human and A.I. combined design.



6. Design process

6.1 Process flowchart



6.2 Algorithms in process

To use algorithmic like process I needed a platform to use to test photo selection and comparing. I choosed to use Pinterest as it is a application for sharing ideas in the shape of photos. My test subject is one of my Pinterest followers. I needed to have test subject who has a lot of visual data that vary to have comprehensive take of user's visual preference.

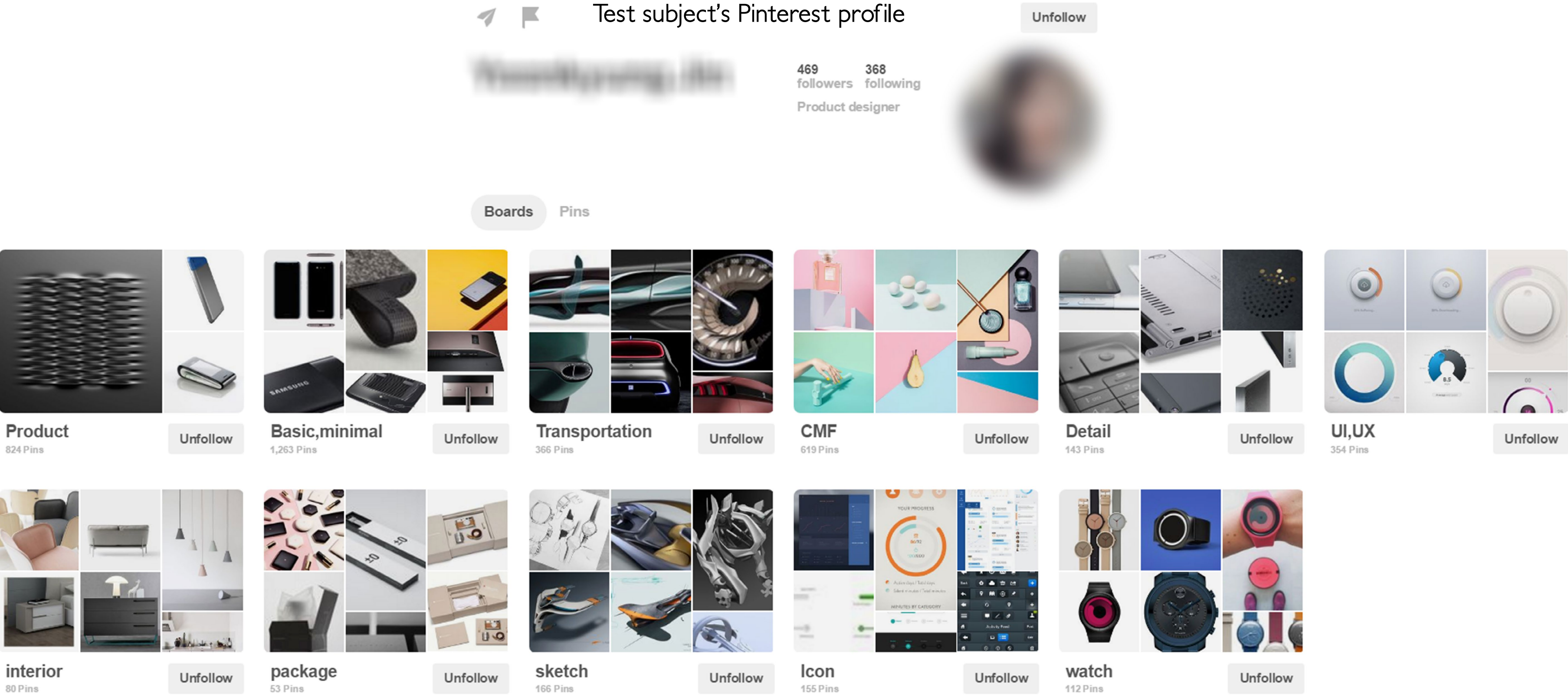


Chart of test subject's Pins

I started with going through test subject's Pinterest boards and collected pictures to categories according to board's title and gave them compulative key words based on content and feeling of the group. I analysed these pictures and came to the conclusion that there is room for two concepts that could fit to

target's visual taste and gave concepts names that would describe the user but also Lada. Two concepts are Bold, which is more aggressive, dynamic and more conservative with its design whereas Play is more conceptual, friendly and playful.



CMF

- Playful
- Simple forms
- Understandable
- Strong colours
- Amusing

PRODUCT

- Playful
- Simple
- Functional
- Amusing



INTERIOR

- Simple forms
- Clear
- Functional

PACKAGE

- Playful
- Simple
- Understandable



TRANSPORTATION

- Playful
- Surprising
- Vivid
- Simple forms
- Detailed
- Functional
- Attitude



DETAIL

- Thoughtful
- Surprising
- Simple forms
- Insightful



ICON

- Playful
- Simple
- Functional



MINIMALISM

- Simple
- Functional
- Amusing



SKETCH

- Attitude
- Modern
- Contrast
- Vivid



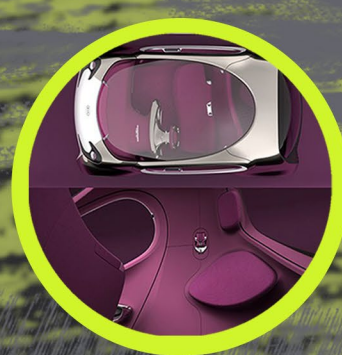
BOLD



TRANSPORTATION



SKETCH



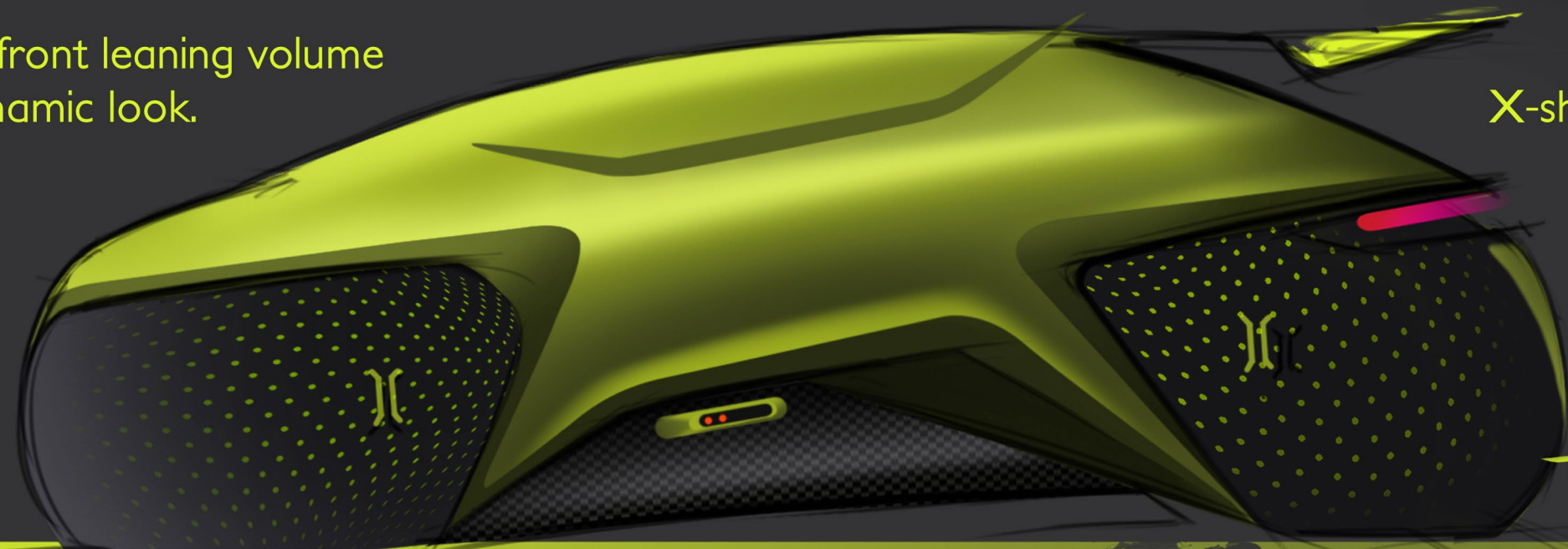
TRANSPORTATION



PRODUCT

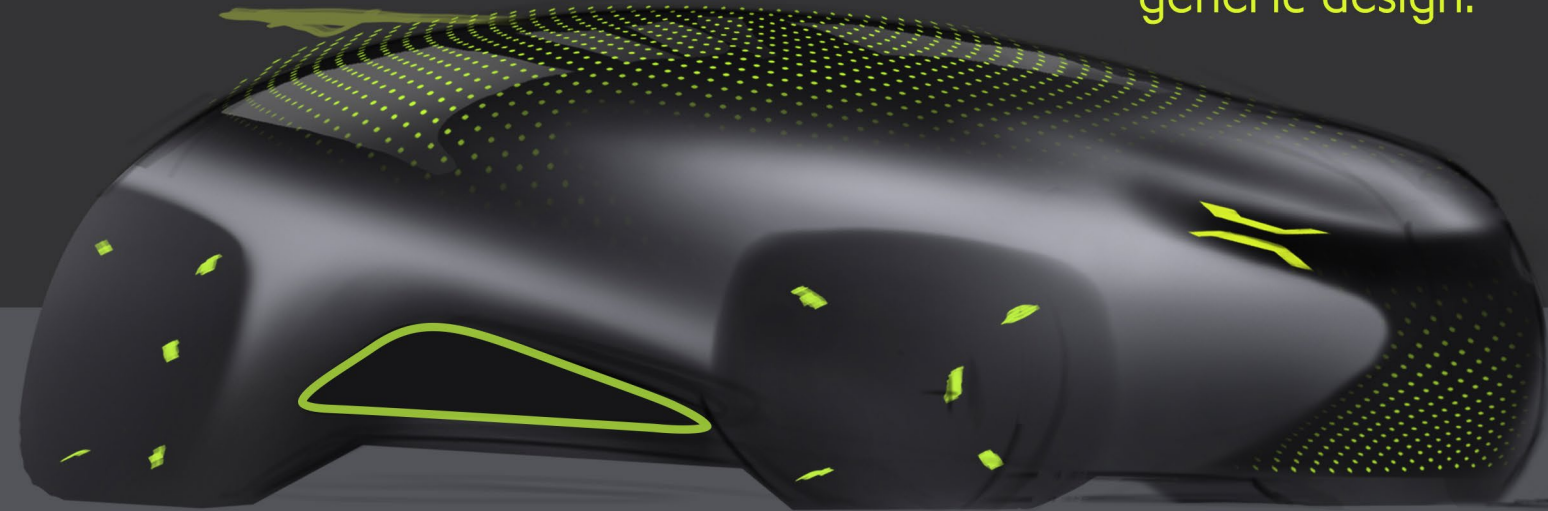
MORE **AGGRESSIVE** MORE **BULKY** MORE **FAST**

Strongly front leaning volume gives dynamic look.



X-shape is formed between upper and middle body.

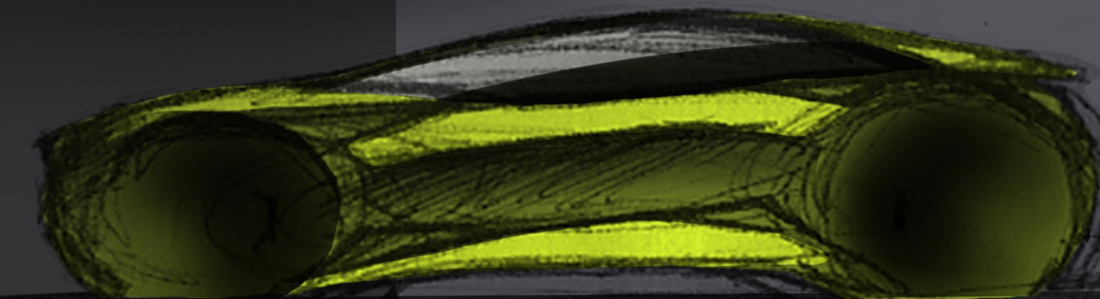
Dynamic surfacing although too generic design.



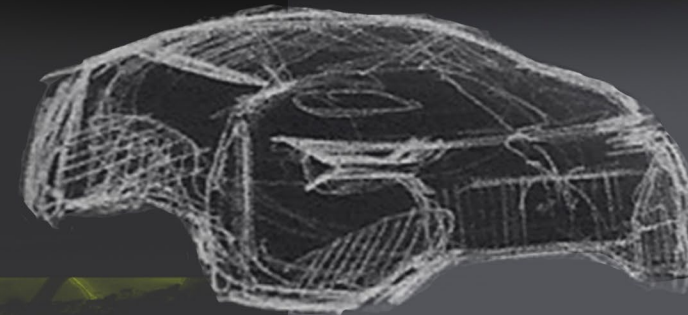
Graphics bring lightness to body.



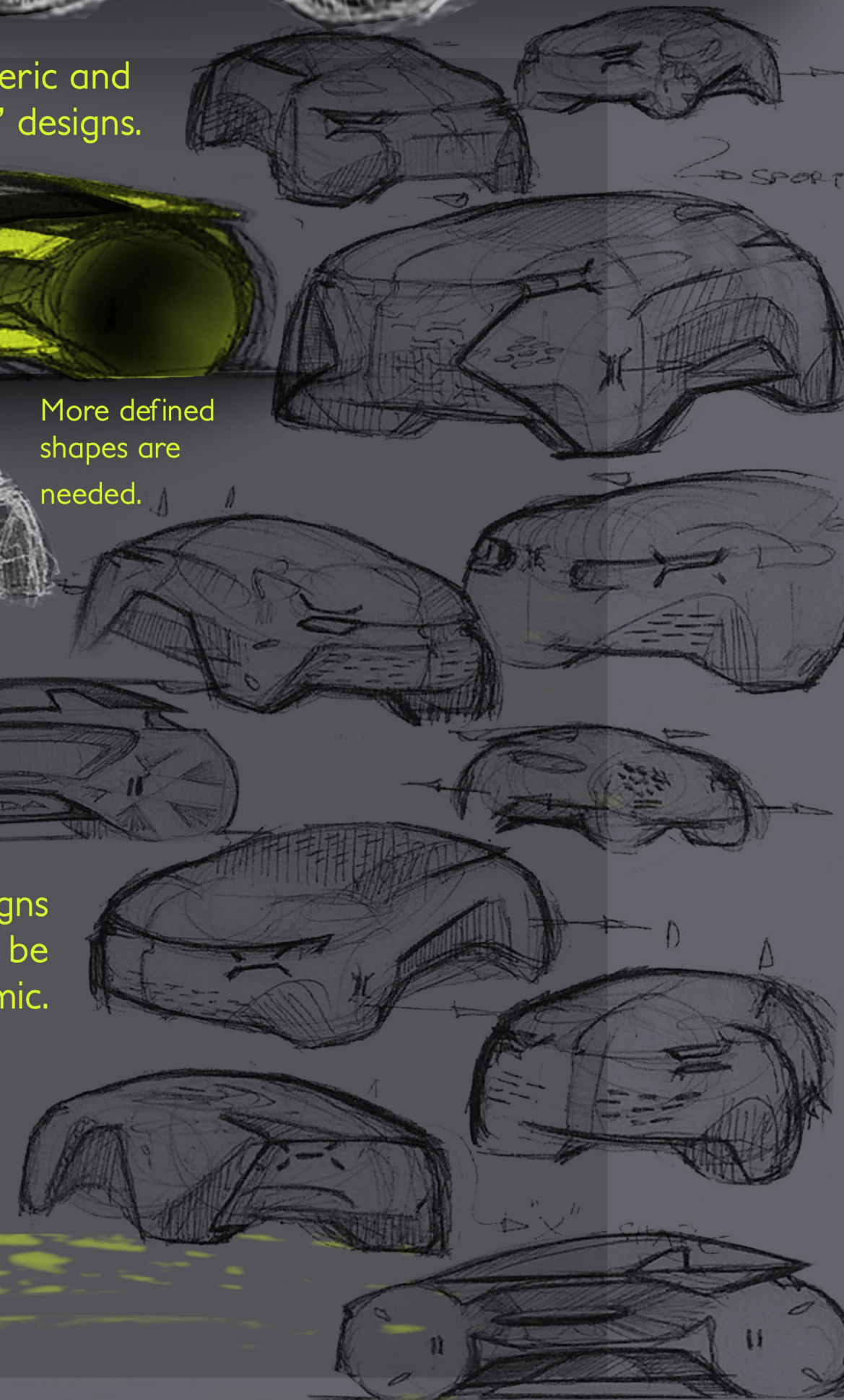
Too generic and "bubbly" designs.



More defined shapes are needed.



Designs need to be more dynamic.



PLAY



DETAIL



TRANSPORTATION

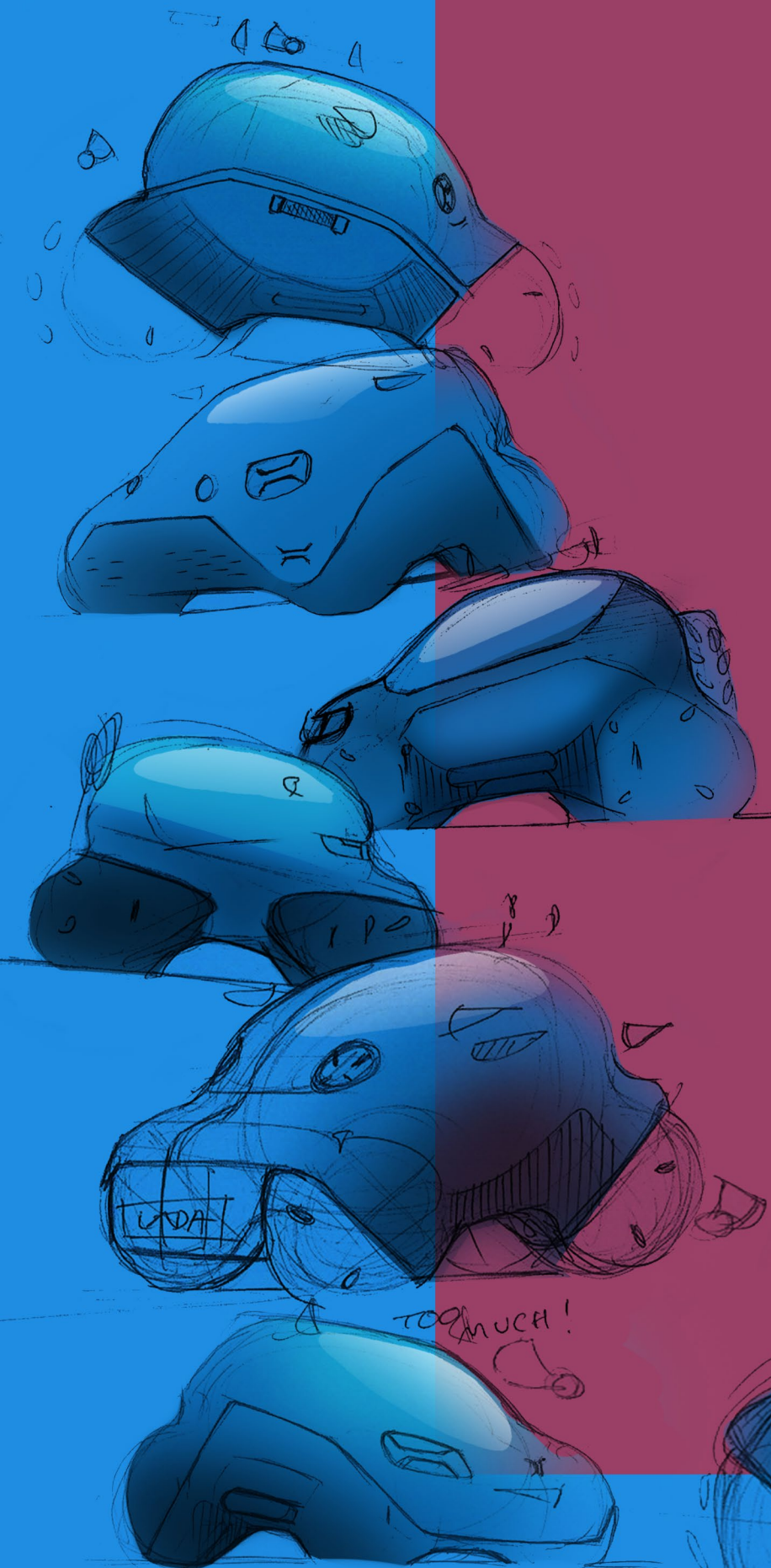


PACKAGE

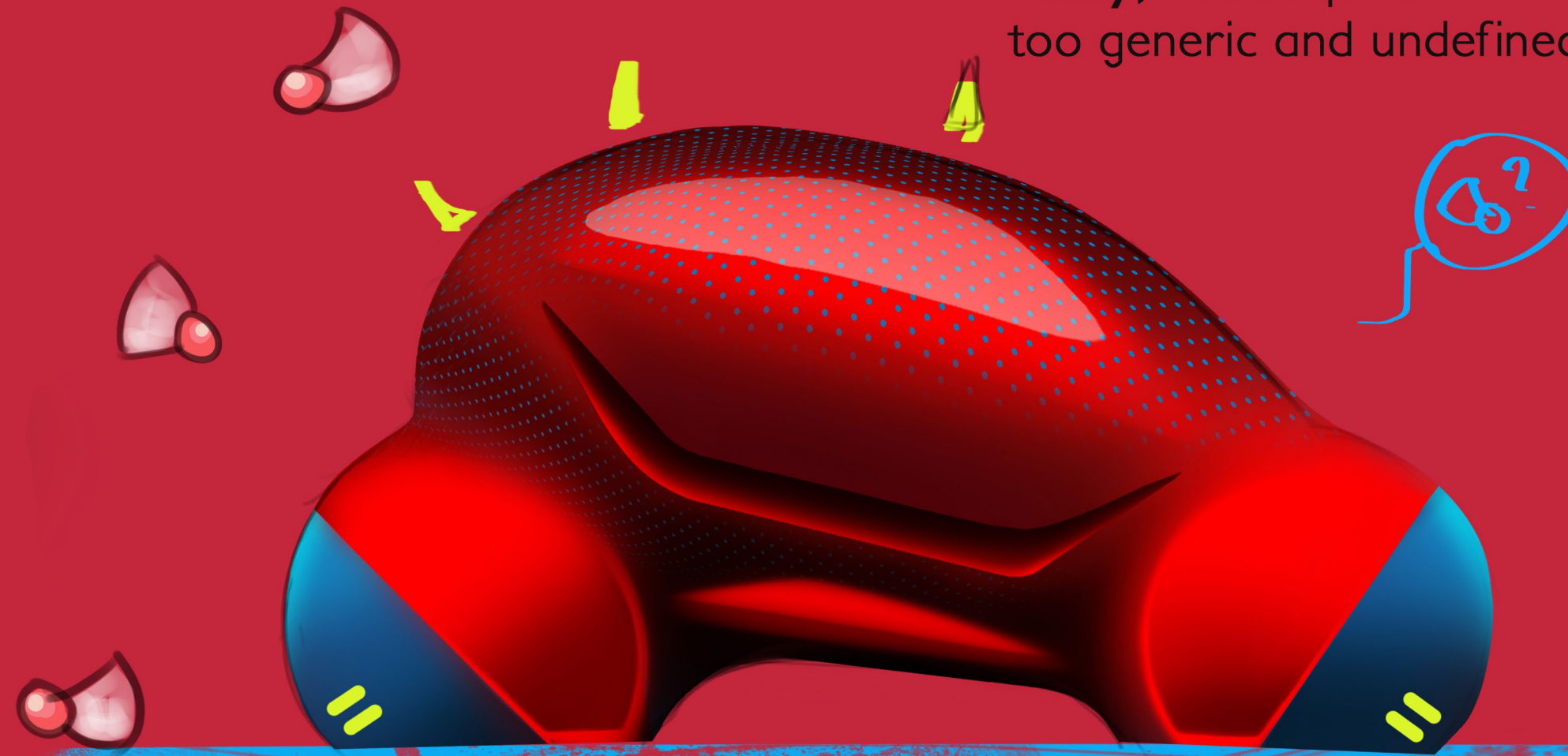


PRODUCT

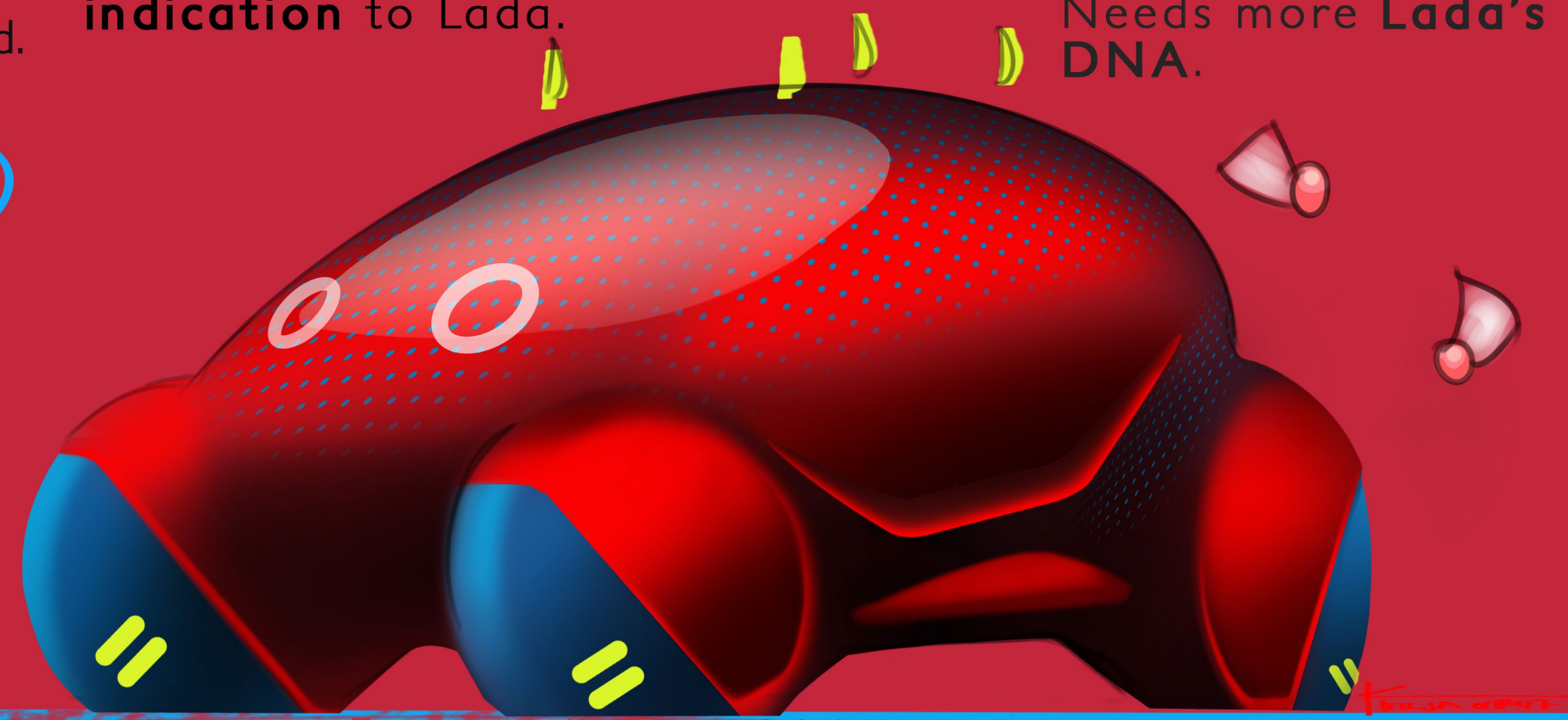
MORE FRIENDLY MORE FUN MORE PLAYFUL



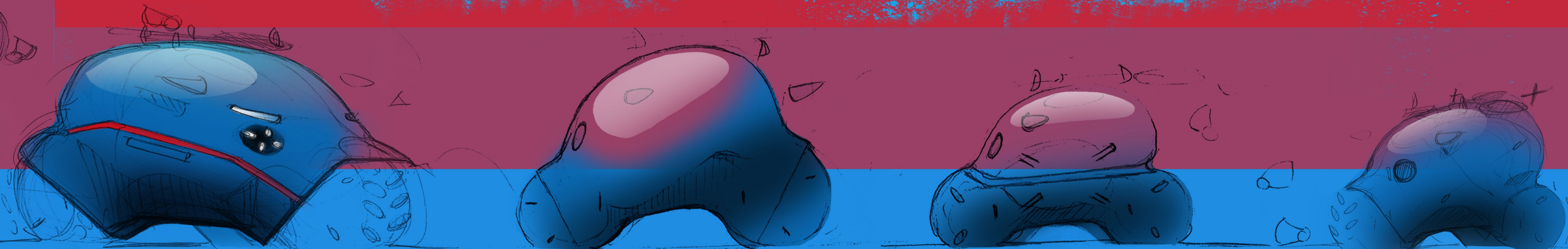
Friendly and funny, but shape is too generic and undefined.



Needs to be more detailed design with stronger indication to Lada.



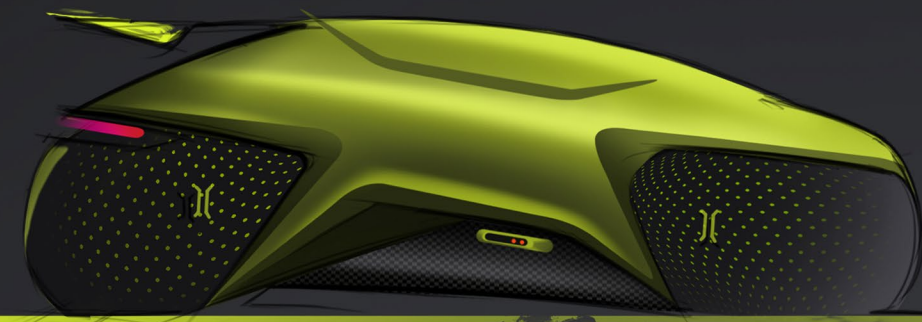
Too bubble like exterior. Needs more Lada's DNA.



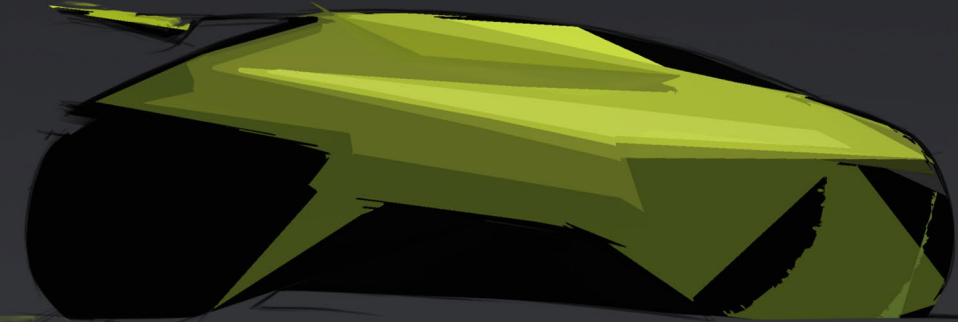
6.3. Experimenting

After defining sketches to two concept directions chosen concepts were put through filters in Photoshop and Prisma mobile app along with image altering mobile application called Mirror Lab to find new ideas and forms to develop concepts further.

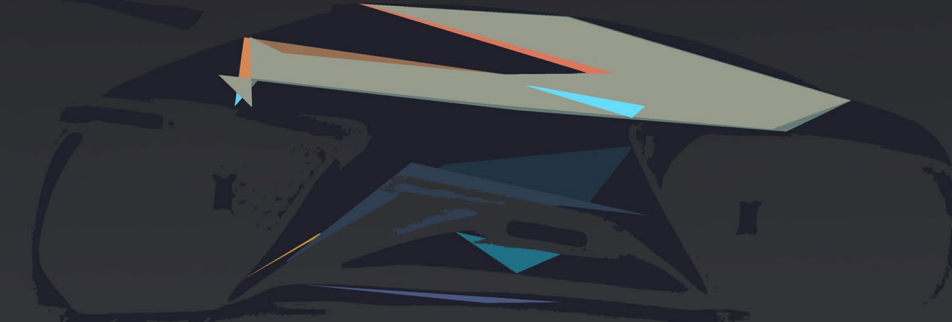




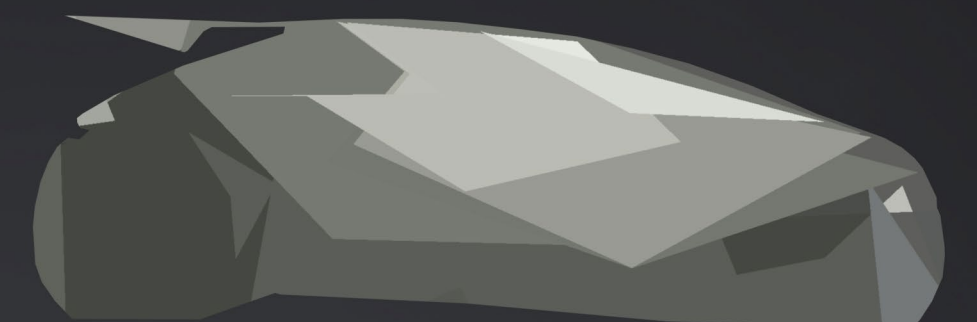
ORIGINAL PHOTOSHOP RENDER



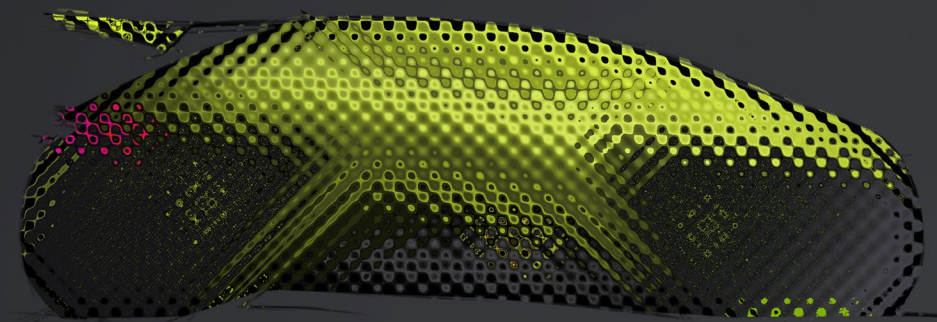
CUTOUT



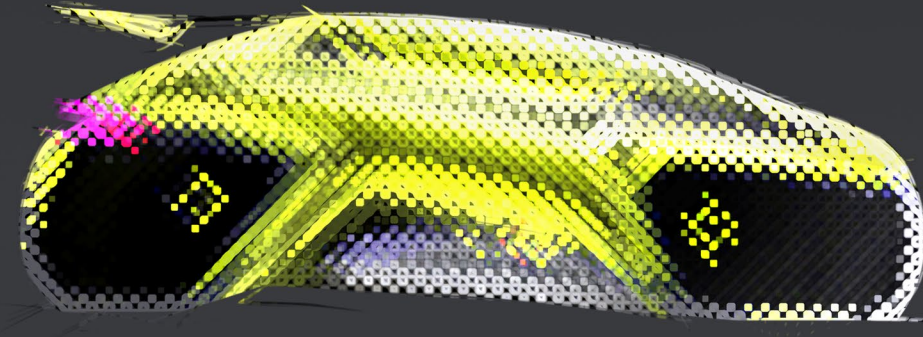
PRISMA RIO + CUTOUT



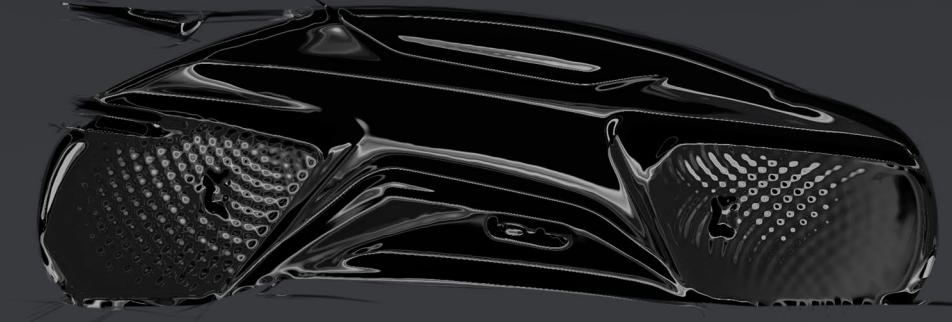
PRISMA CURLY HAIR + CUTOUT



GLASS



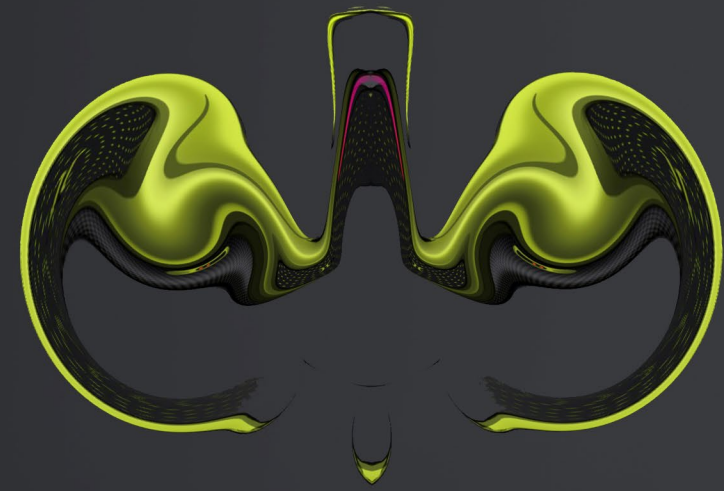
GLASS + GLOWING EDGES



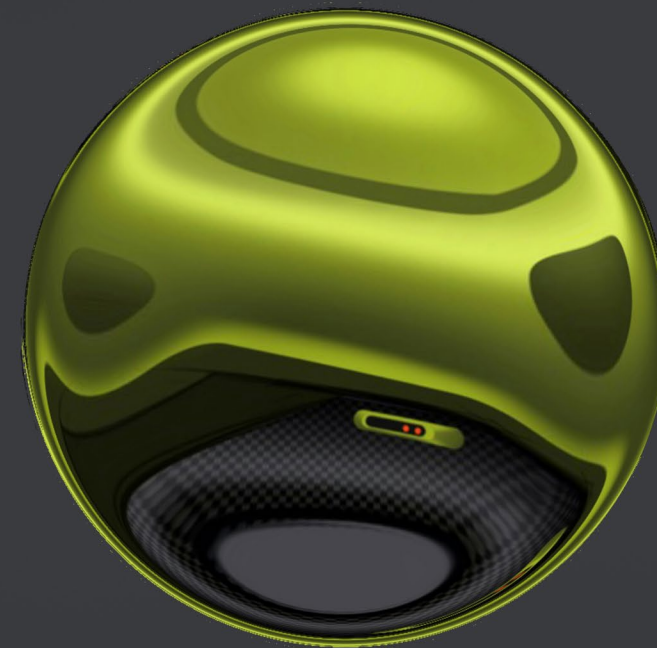
CHROME



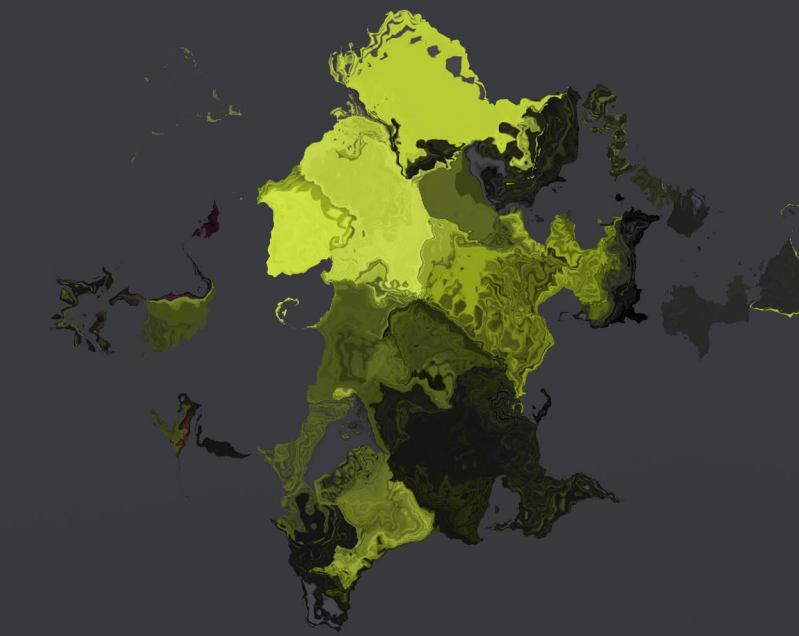
4 x PRISMA ELECTRIC + ROY



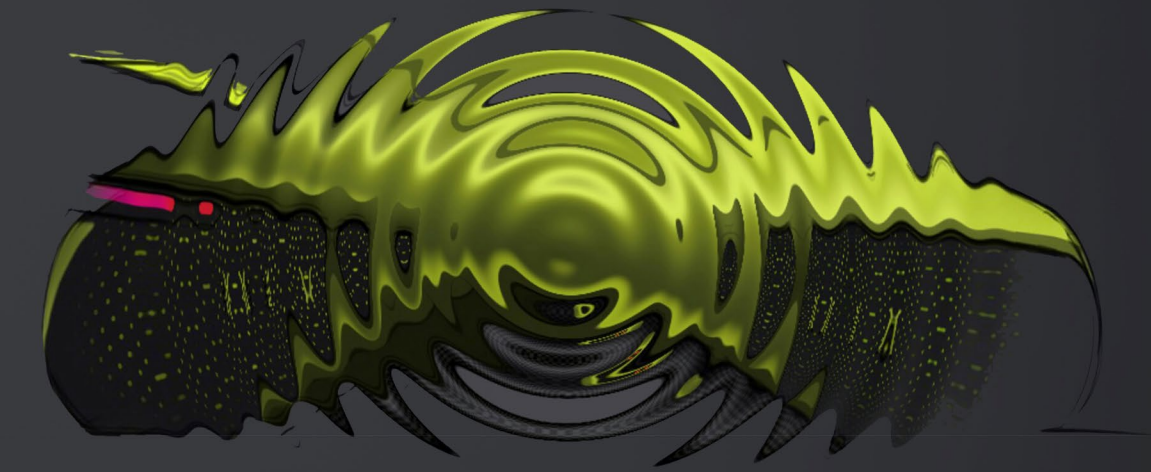
MIRROR LAB MIRRORED PLANET



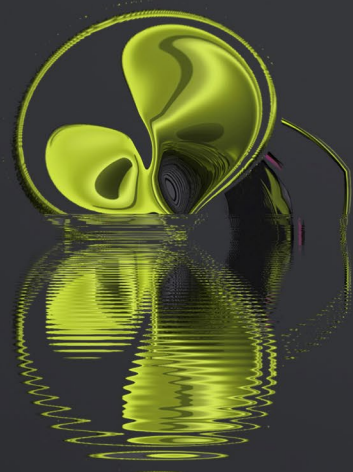
MIRROR LAB GLOBE



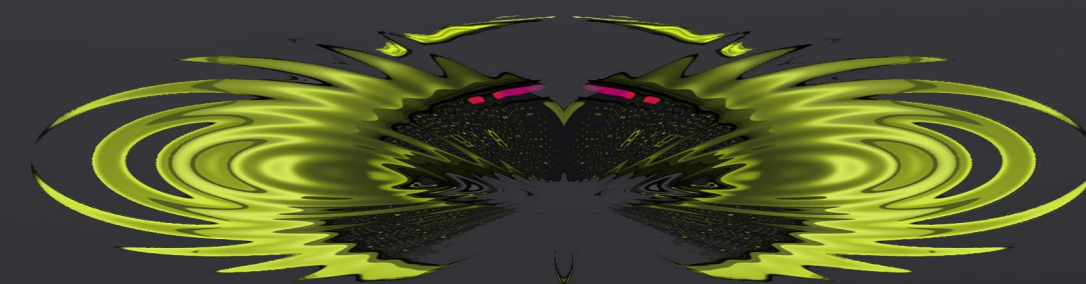
MIRROR LAB WHIRL + MARBLE



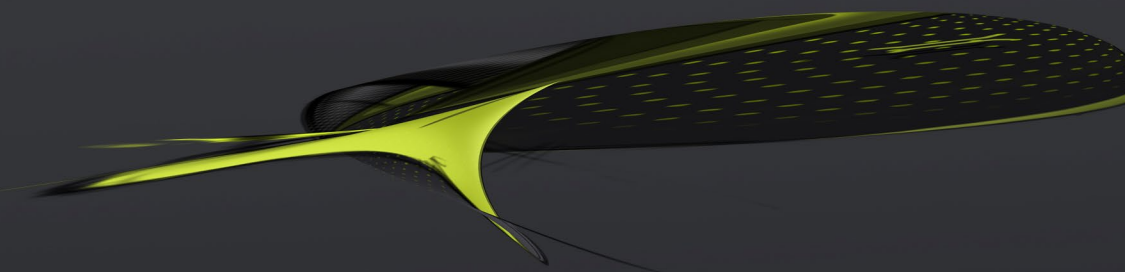
MIRROR LAB RIPPLES



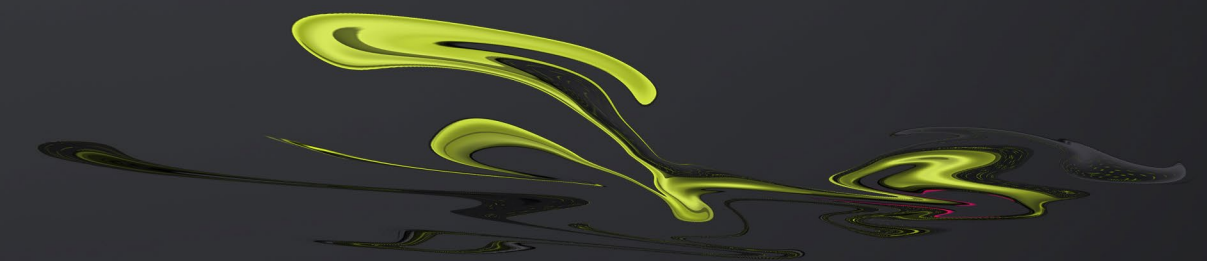
GLOBE + PLANET + LINEAR RIPPLES



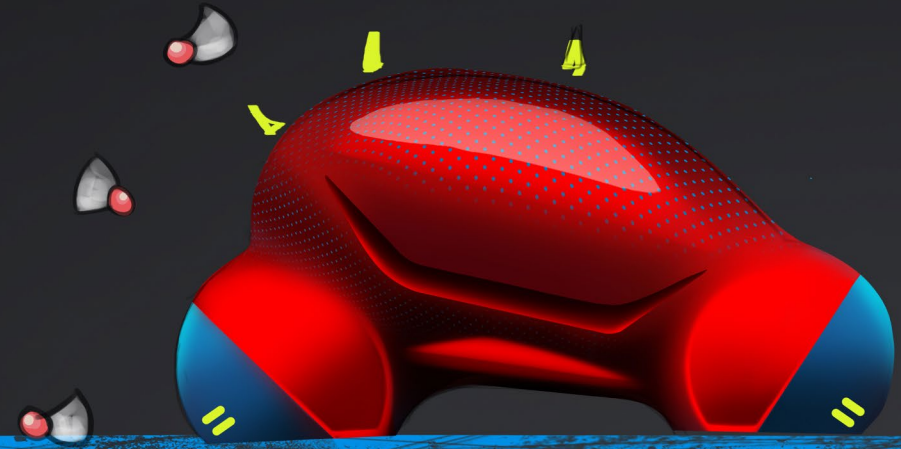
RIPPLE + PLANET + WARP



WARP



LIQUIFY + WARP



ORIGINAL PHOTOSHOP RENDER



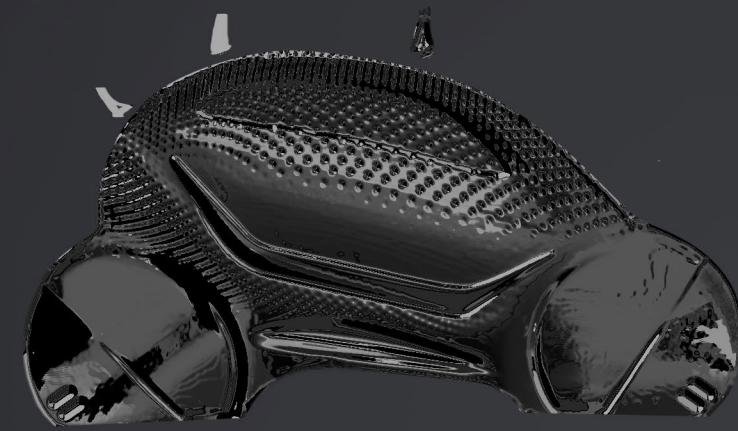
CUTOUT



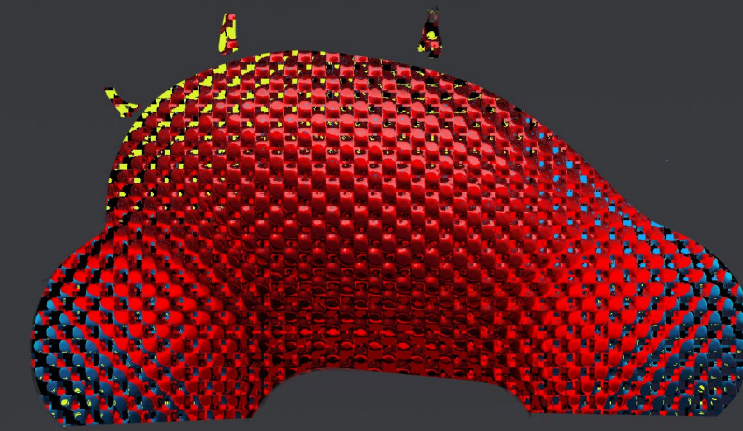
PRISMA ROY + CUTOUT



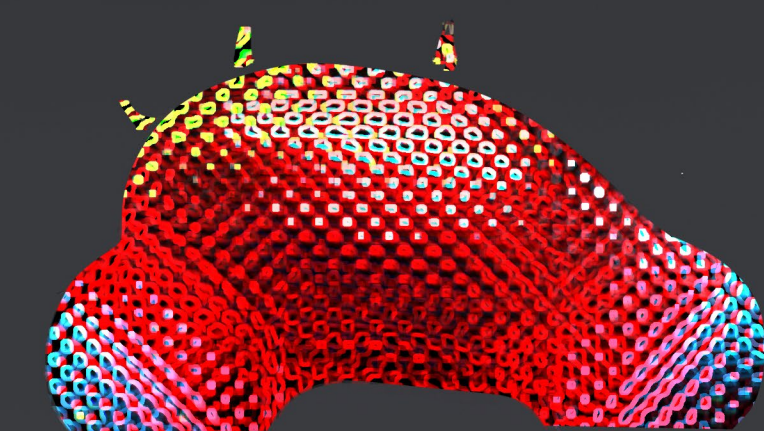
PRISMA WAVE + CUTOUT



CHROME



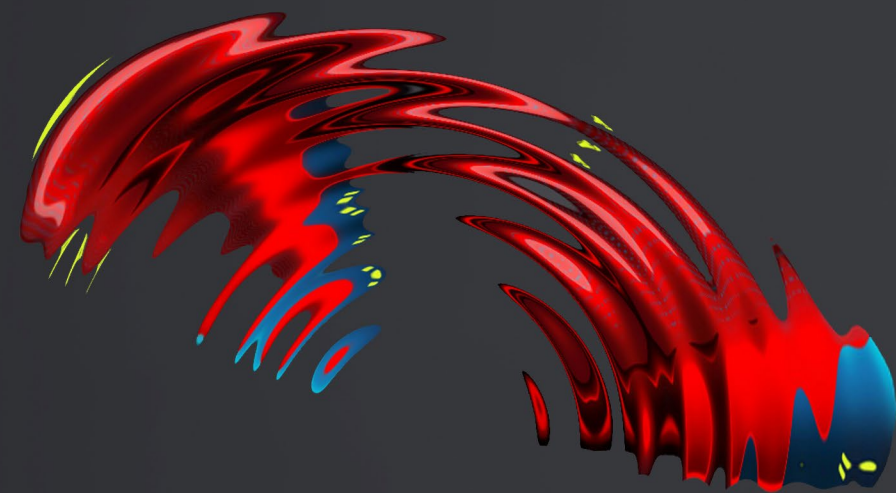
GLASS



GLASS + GLOWING EDGES



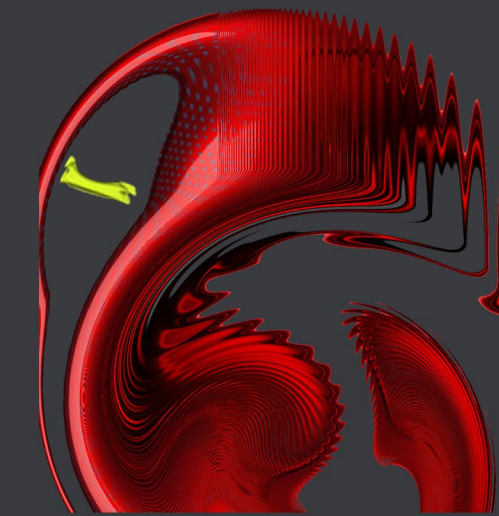
ROY + UDNIE + FEMME + 7 x MONDRIAN



RIPPLE



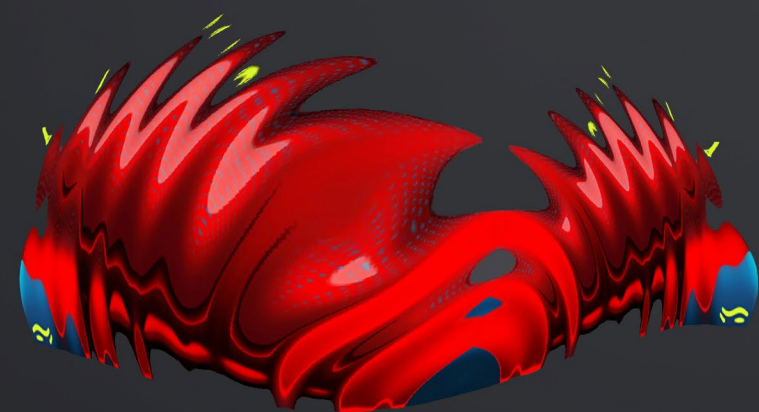
WHIRL + GLOBE



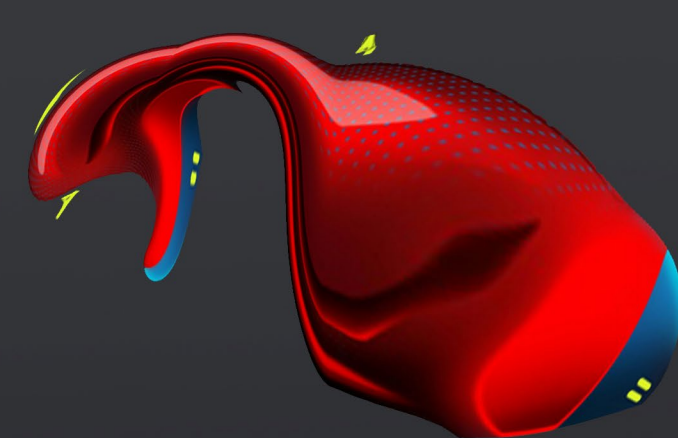
WHIRL + RIPPLE + LINEAR



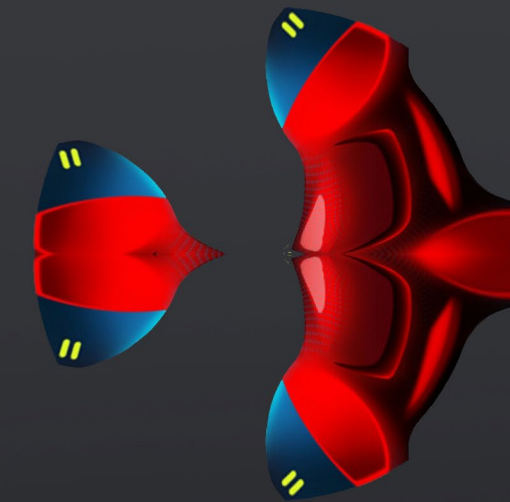
MONDRIAN + GLOBE



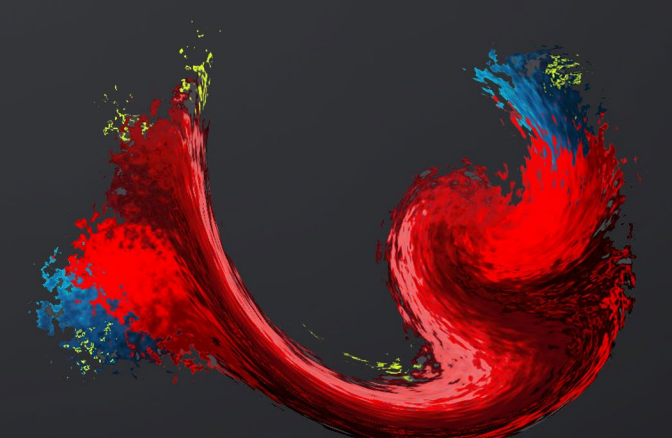
RIPPLE + BUMP



WHIRL + BUMP



MIRROR + PLANET



MARBLE + WHIRL

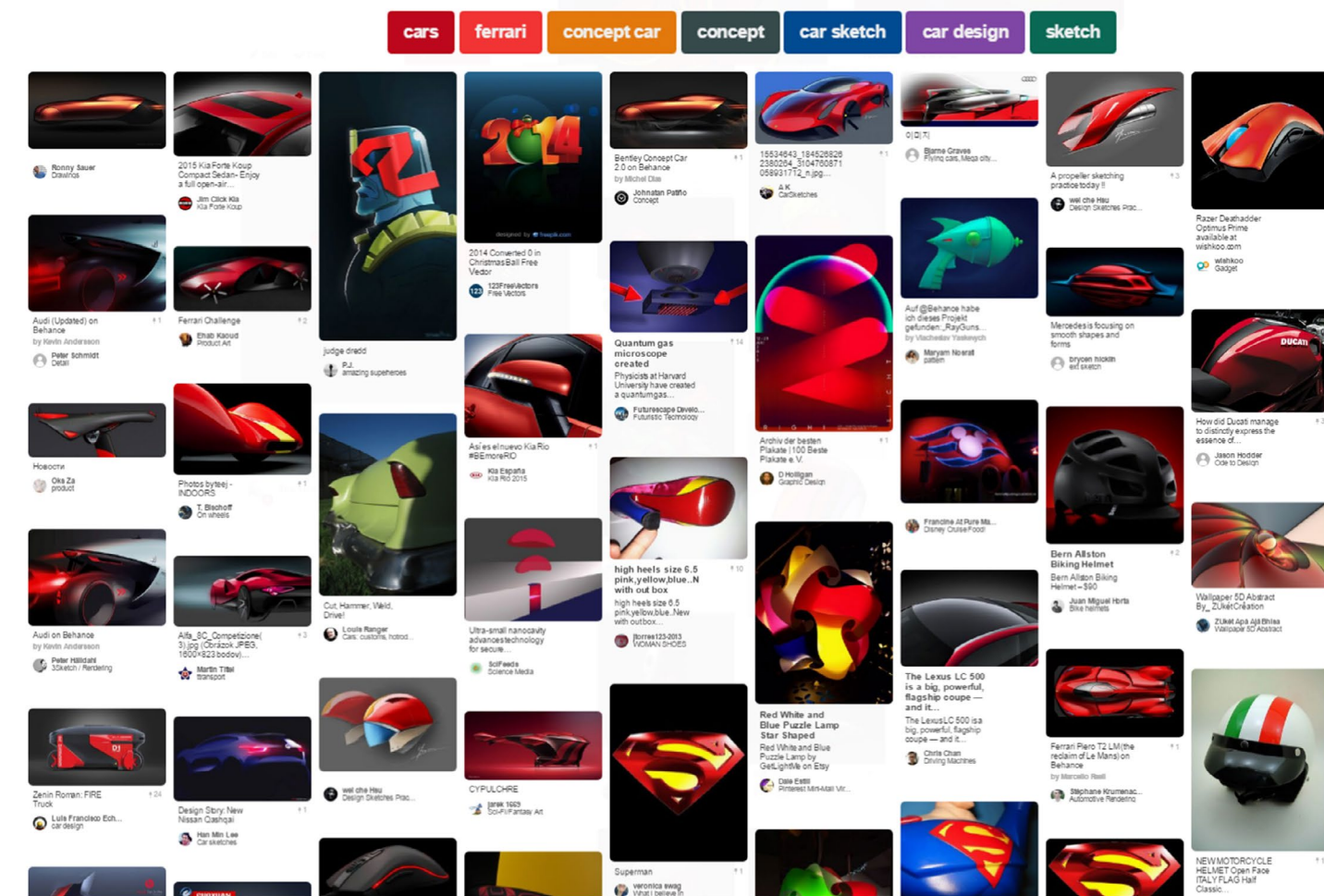
Finding visually similar images from Pinterest

Search showed that Play concept had a lot of similarities with different products, logos and icons, helmets and motorcycles. Similarities were also between Ferrari and Alfa Romeo, but it's more likely to be caused by bright red colour than design elements.

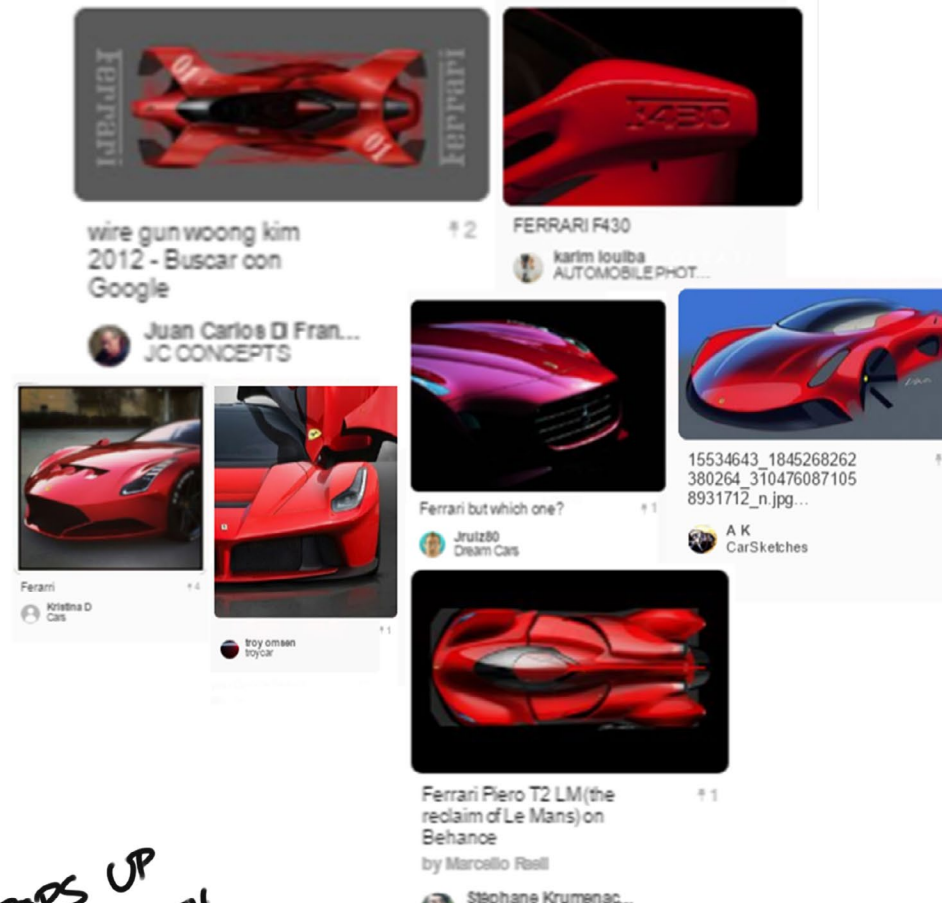
Raphael Linari, Lada Studio Chief in Moscow, comments on Play concept's design points out that it is too generic for a small car and needed to be developed and defined further, although it is friendly and funny.

This concept will possibly be developed further to be presented on Degree Show 2017, but not in the publication seminar due to timing.

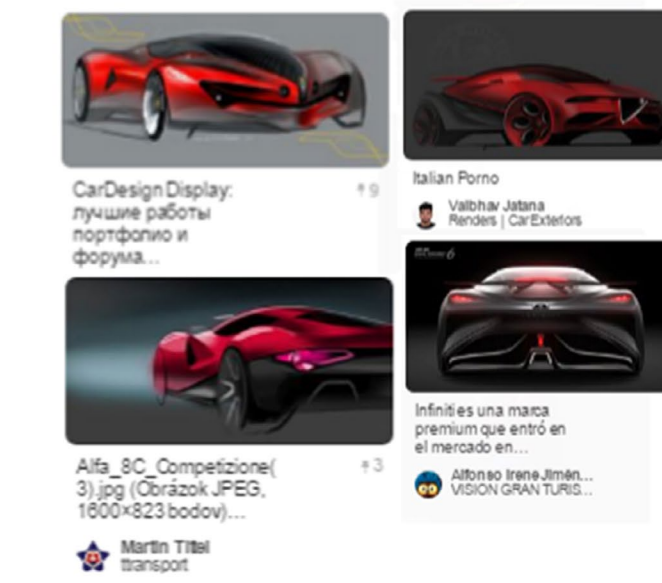
Visually similar results



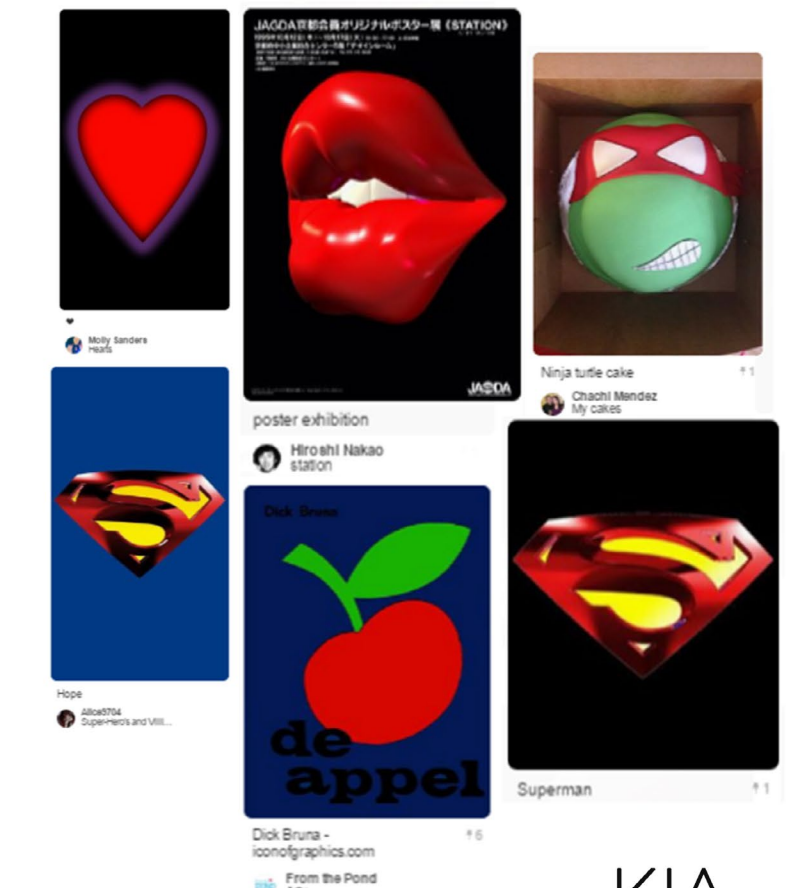
FERRARI



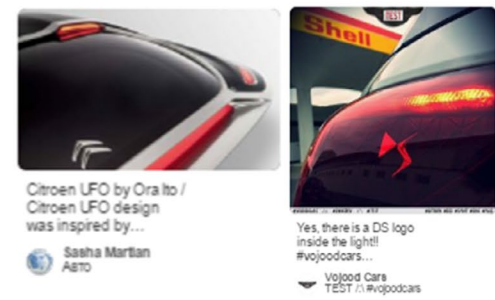
ALFA ROMEO



LOGO / ICON



CITROËN

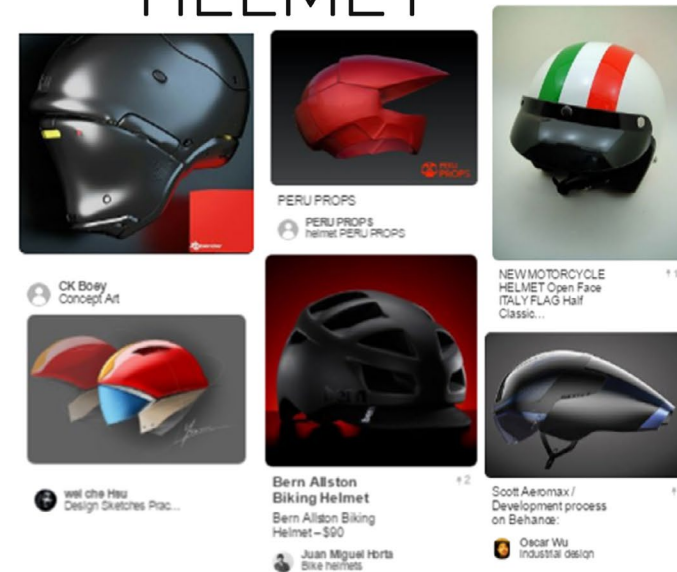


MERCEDES-BENZ

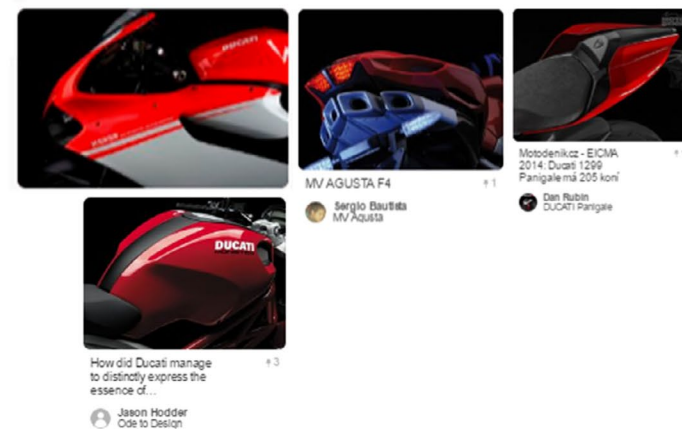


Mercedes is focusing on smooth shapes and forms

HELMET



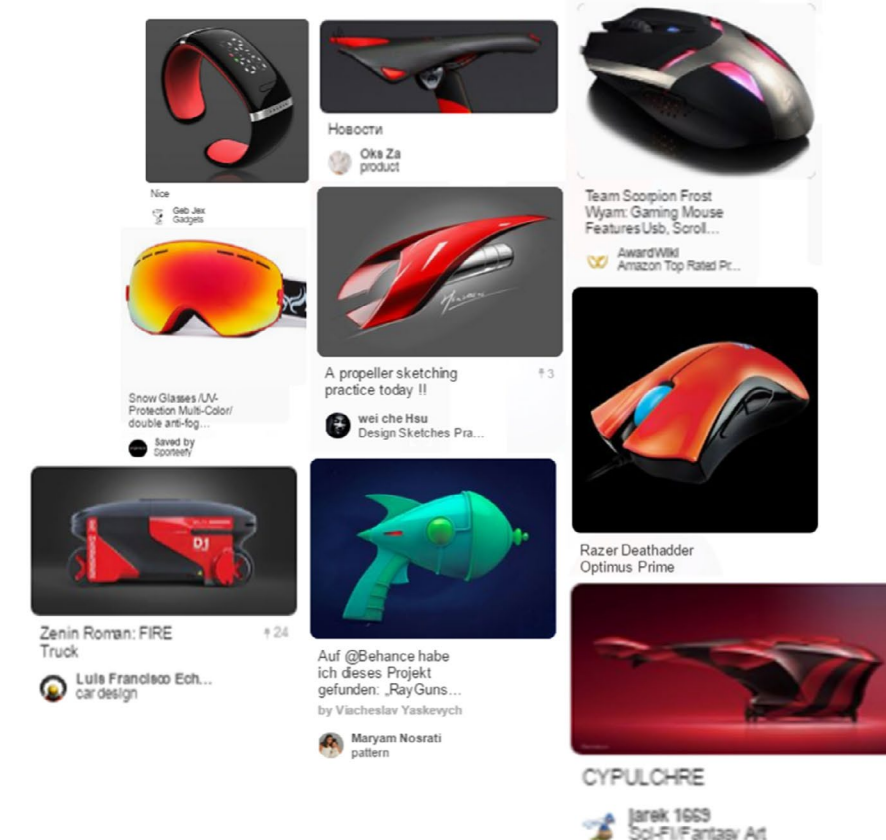
MOTORCYCLE



RENAULT



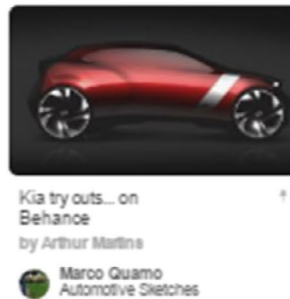
PRODUCT



NISSAN



KIA



BMW



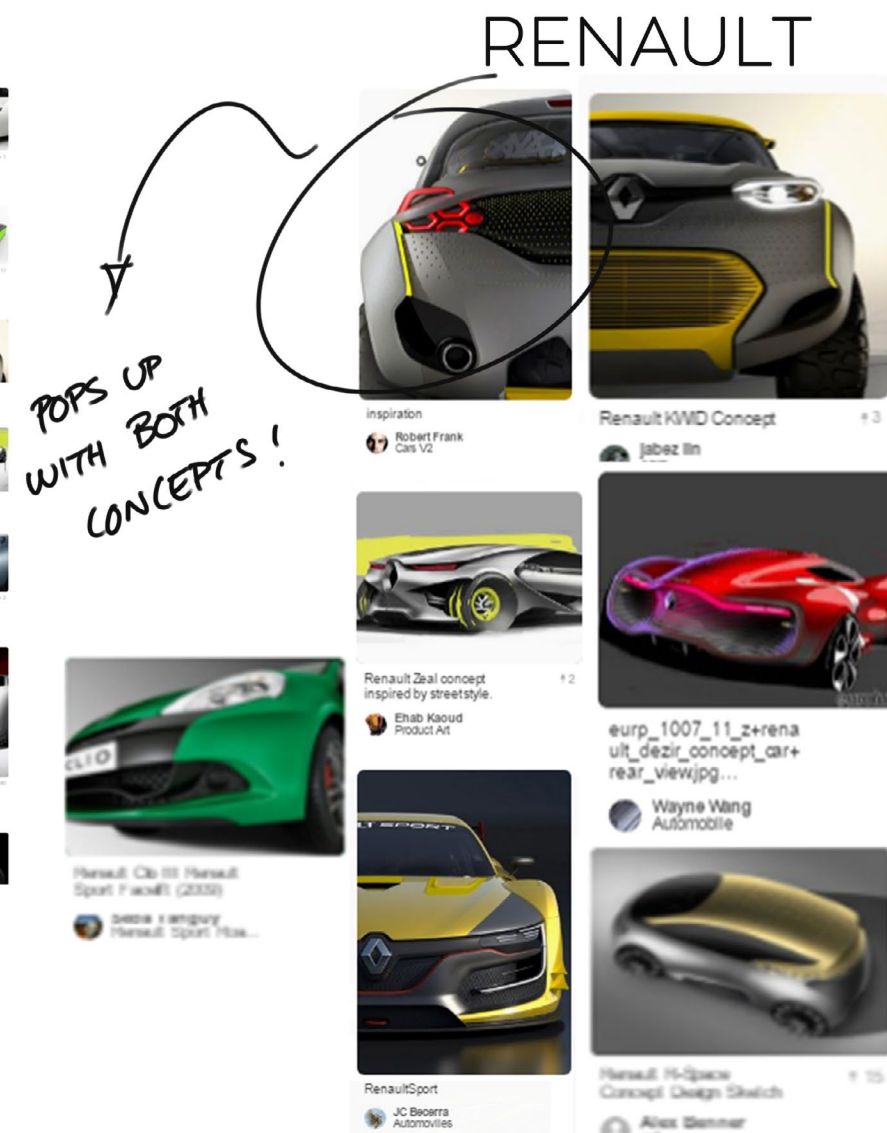
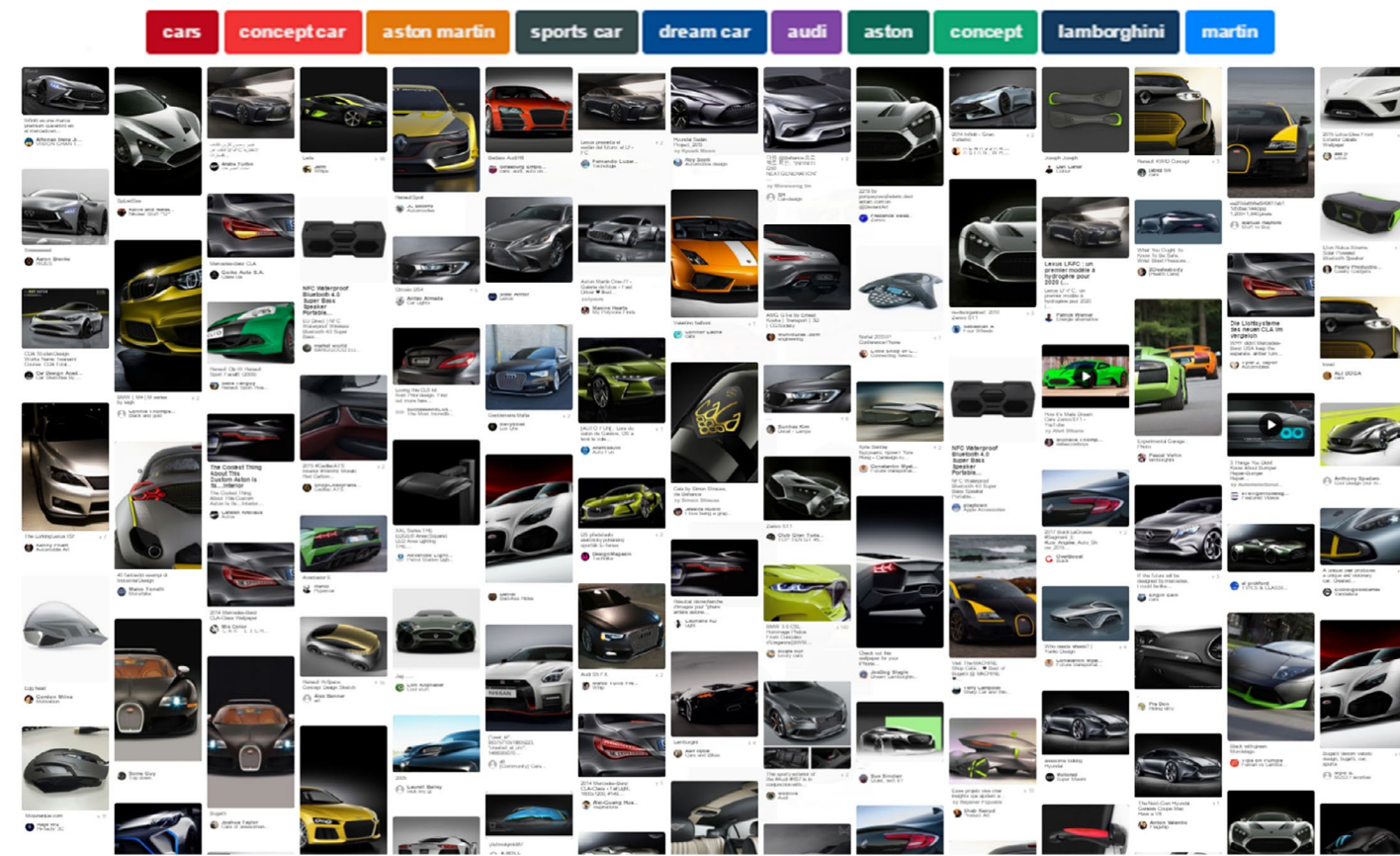
Finding visually similar images from Pinterest

Image comparison showed that Bold concept had a lot of similarities with car brands such as Mercedes-Benz, Renault, Aston Martin, Audi, Bugatti and Infiniti. Search results were mainly cars or car details, but there were also some products like helmets and mouses.

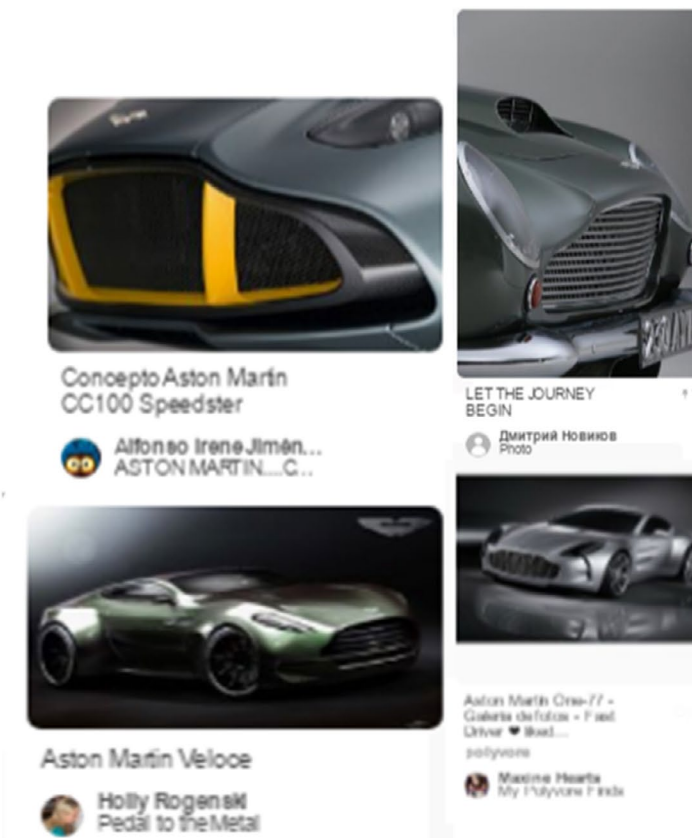
Research supported the decision that concept's segment should be F (*full-size luxury/high-end luxury*). Dimensions of the concept are based on *Aston Martin Rapide S*, length 5020 mm and height of 1350 mm.

Raphael Linari's comments on the first Bold concept pointed out that this concept reminded too much Renault and not enough Lada, which is more dynamic with its design and has more tension than Renaults.

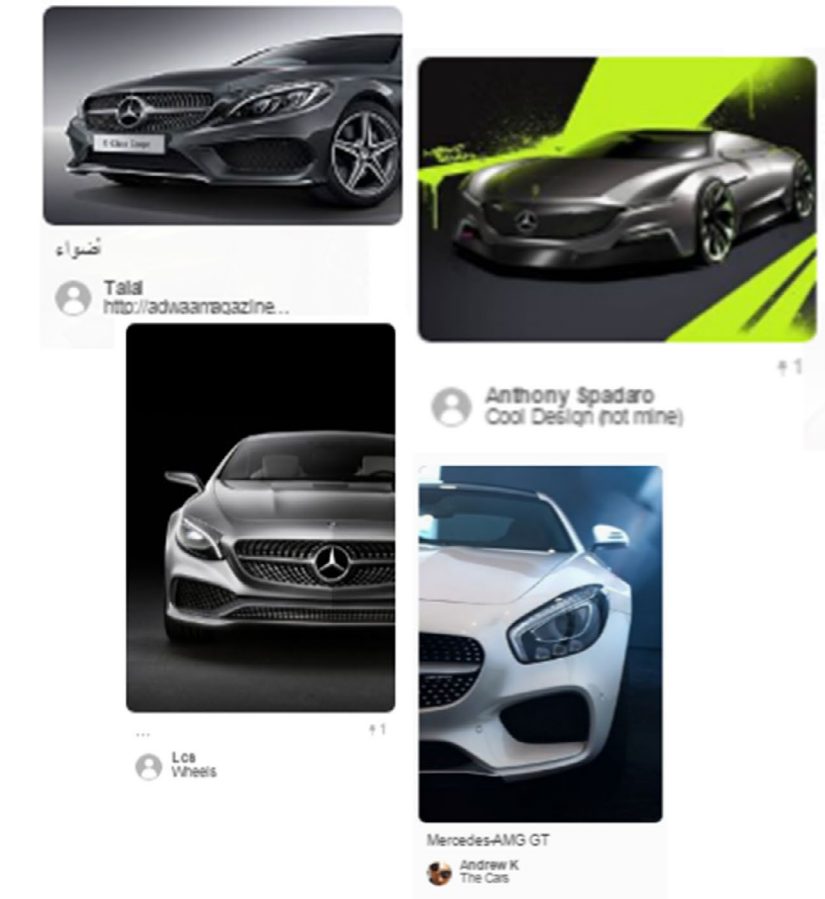
Visually similar results



ASTON MARTIN



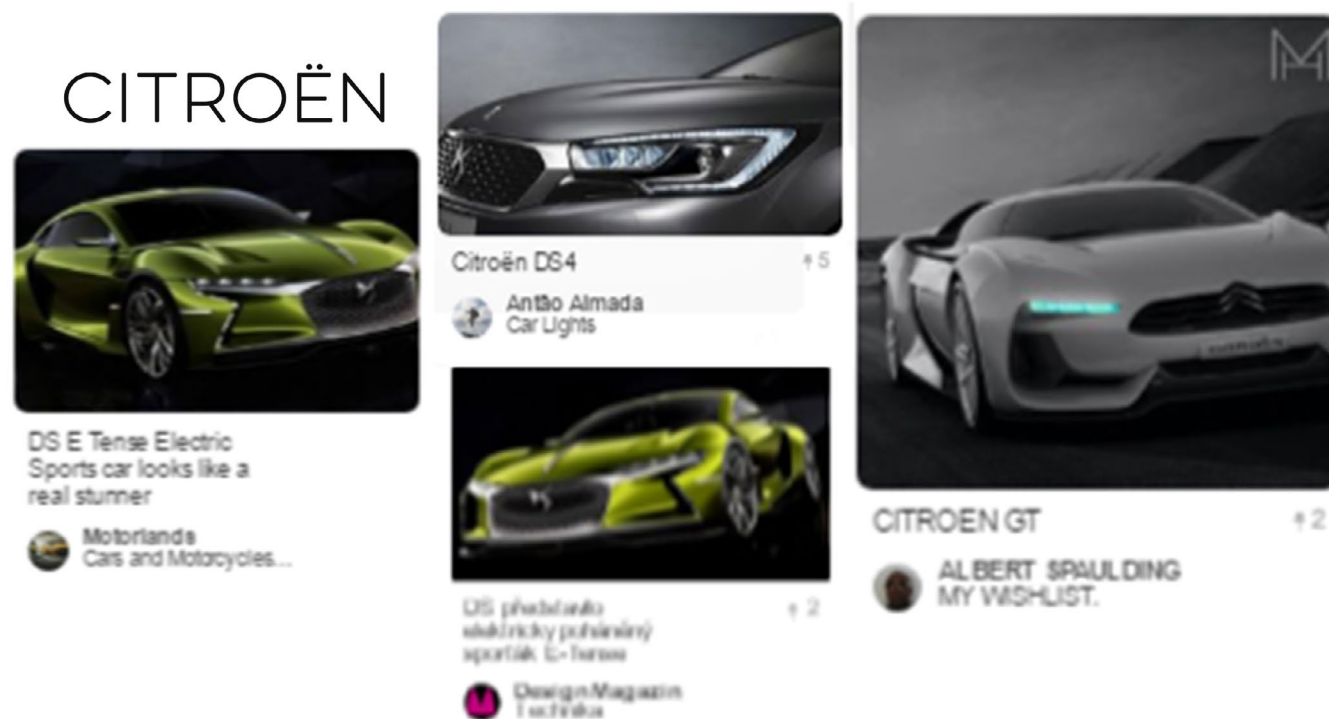
MERCEDES-BENZ



INFINITI



CITROËN



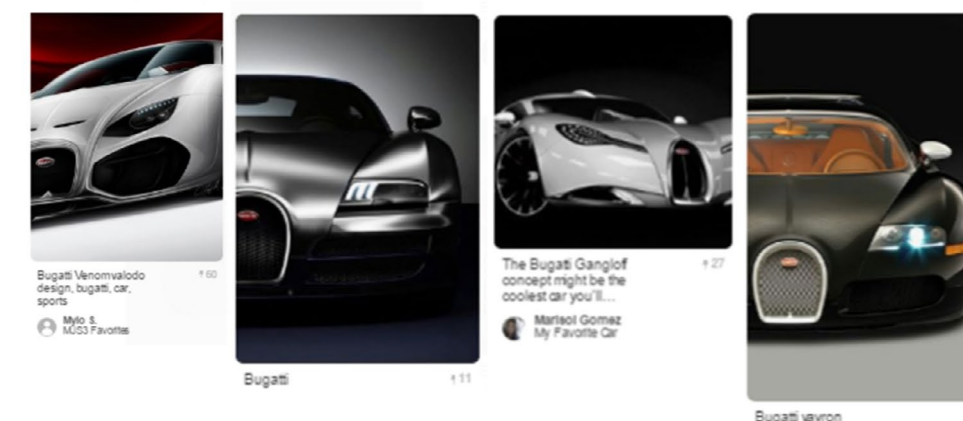
AUDI



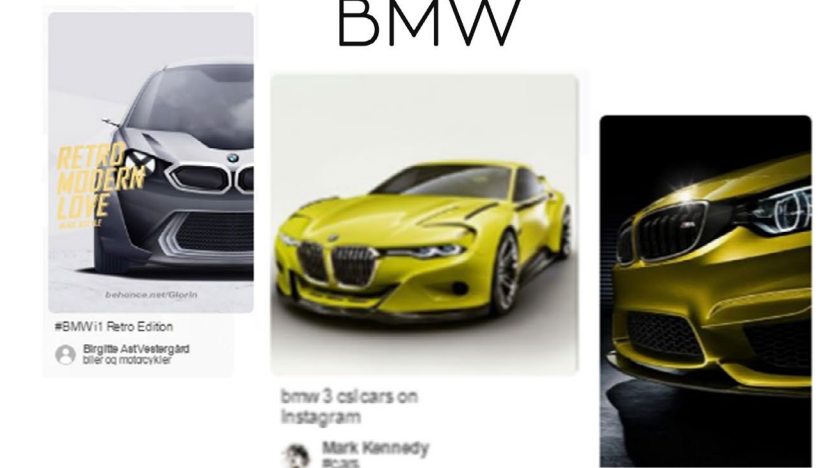
LADA



BUGATTI



BMW



SKETCH PHASE 2

Longer body to add strength.

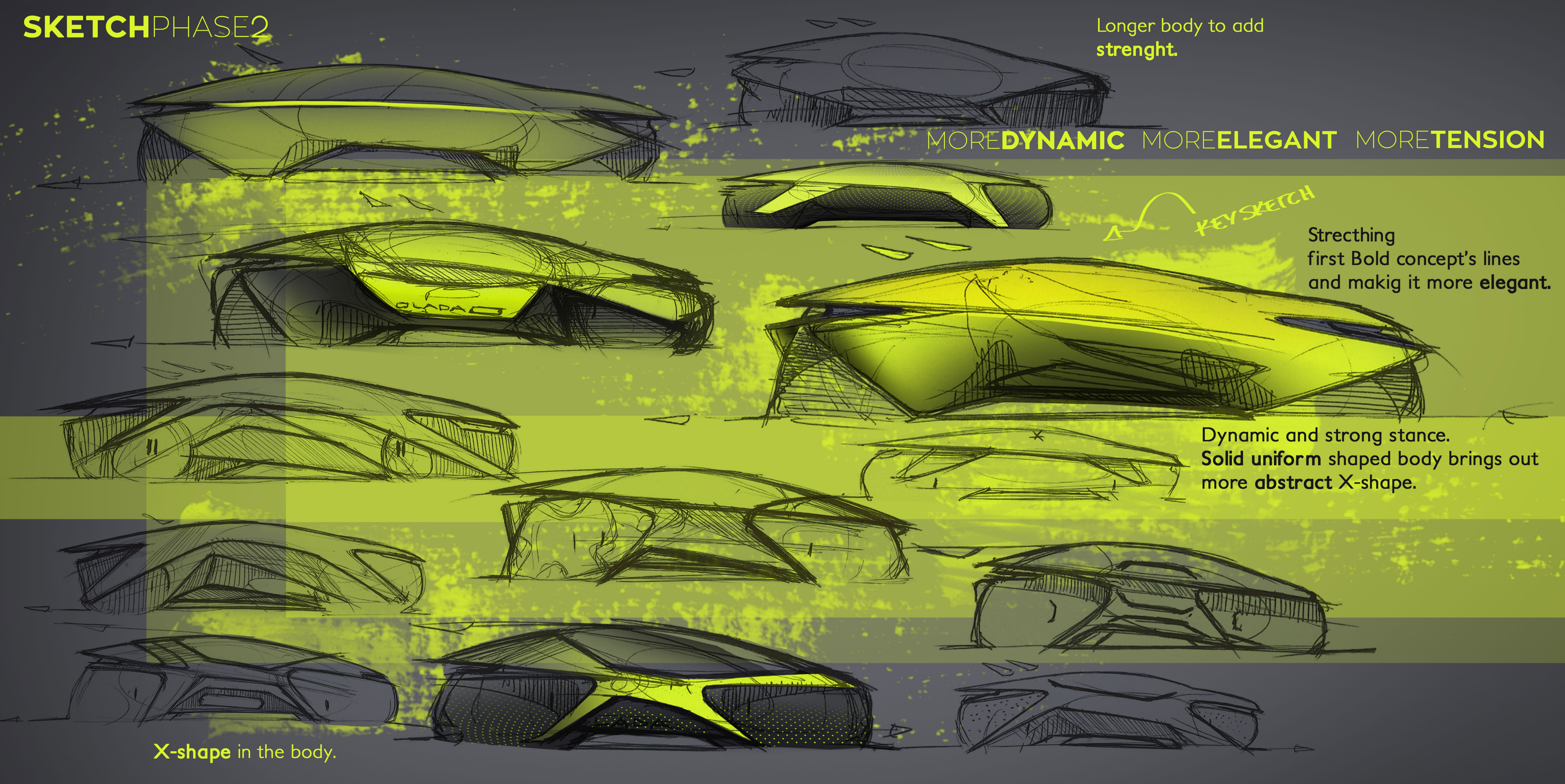
MORE DYNAMIC MORE ELEGANT MORE TENSION

KEY SKETCH

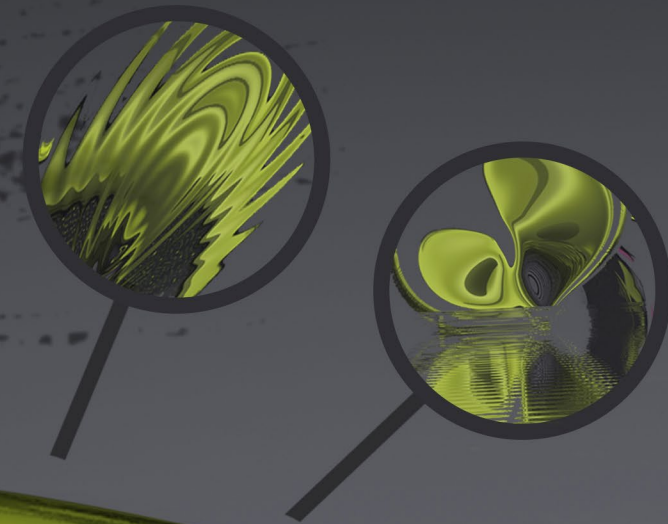
Stretching first Bold concept's lines and making it more elegant.

Dynamic and strong stance. Solid uniform shaped body brings out more abstract X-shape.

X-shape in the body.



6.6 Form giving SKETCH PHASE 3



First concept reminded too much
Renaults and needed more
dynamic stance.

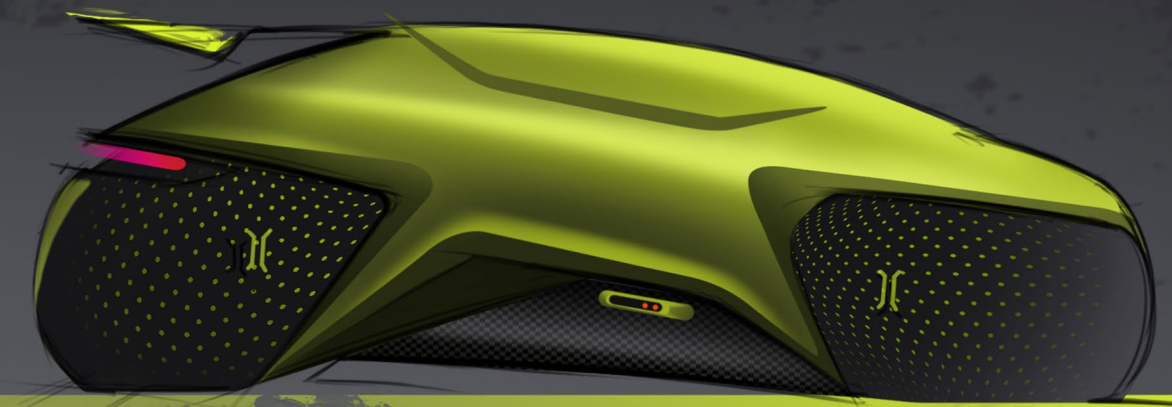
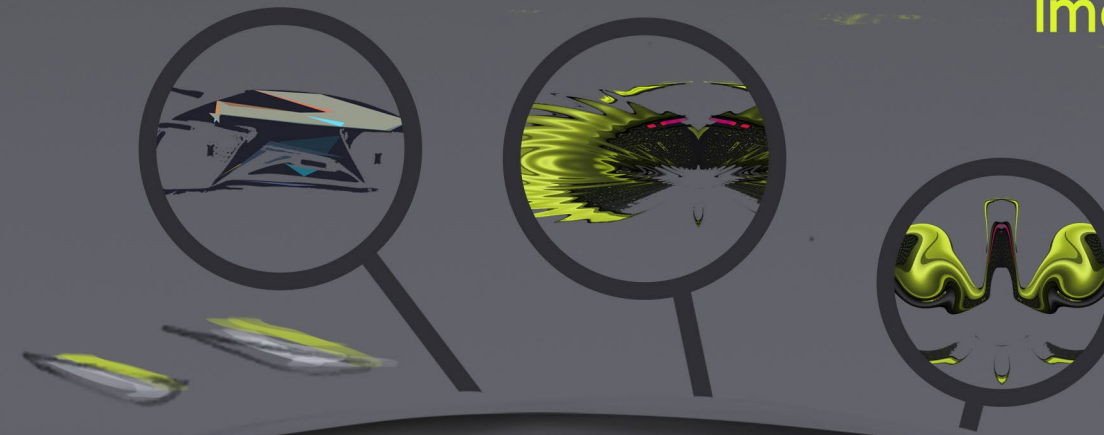


Image comparison showed that concept's
dimensions should be **stretched**.



Lines in middle body create too
bulky feeling and fades the proportions.

PROPOSAL NO1.

Proposal No 1 and 2 reminded too much of **DS E-Tence**
concept, partly because of the color and strong shape
under front light.



PROPOSAL NO3.

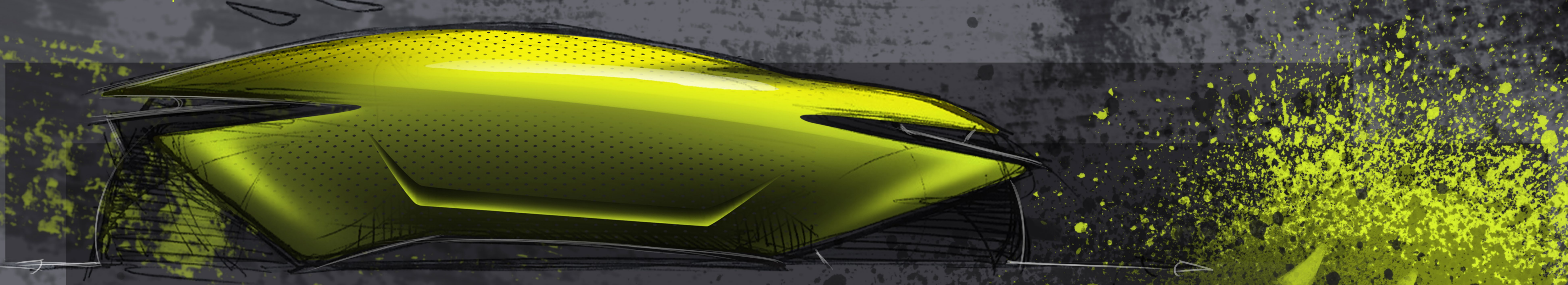
PROPOSAL NO2

KEY SKETCH!

Solid uniform shaped body with
characteristic **half X** inset in the hem.



PROPOSAL NO4.

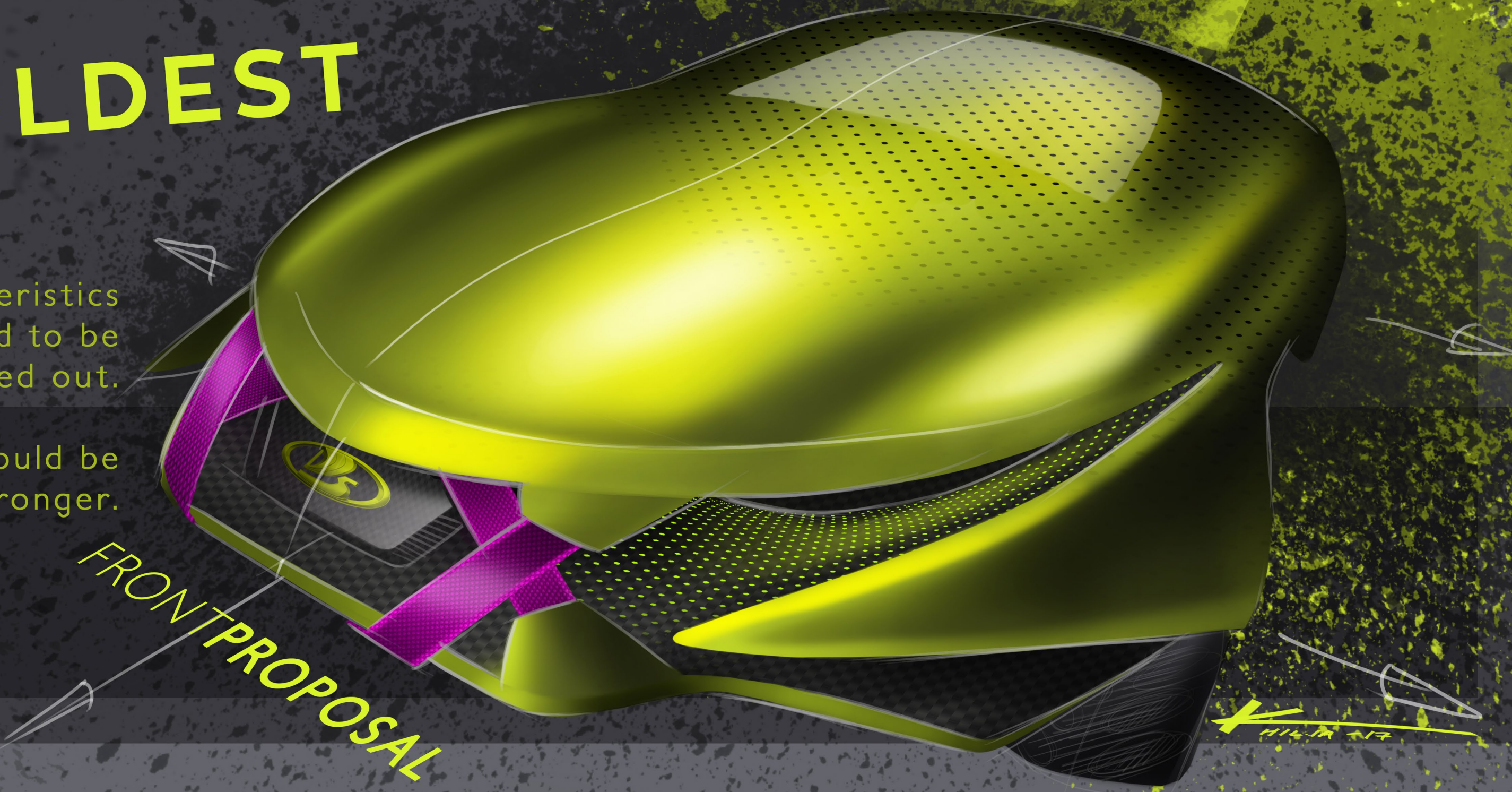


EXTERIOR RESEARCH
BOLD BOLDER BOLDEST

Concept still has strong characteristics of DS E-Tense concept that need to be figured out.

Lada's design features should be manifested stronger.

Current direction of the concept which will be developed further together with Raphael Linari until graduation seminar.



FRONT PROPOSAL

8. Evaluation

8.1 Output

The subject of thesis was very interesting and challenging as algorithms were quite new field of science to me, also I am highly fascinated about artificial intelligence and its impact to present and future. As a brand Lada is good to have as a part of project as it's going through revolution with its brand, design and future.

Overall result of the project is comprehensive with the means of showing a process that applies algorithms from social media to a design process which was my main ambition although the final designed concept is still going through development.

8.2 Process

In the beginning of process I was trying to figure out the basics of algorithms what they are, what they do and how design can benefit from them, which was challenging as there was a lot of written text to read and sometimes understanding the essentials were hard.

After research I needed to use all collected information to create a design process that could benefit from this information, I considered it as the most important part of my graduation project. Turning all collected data to actual designed form proved to be highly challenging within given time as the research and searching for a process took majority of the time. My mentor in this project was Raphael Linari, Lada Studio Chief in Moscow, and working with him has been rewarding. The concept will be developed further until Lahti Institute of Design's Vehicle design department's Stance17 Vehicle Design Exhibition show on 25.-27.5.2017 at Ace Corner Finland, Lahti.

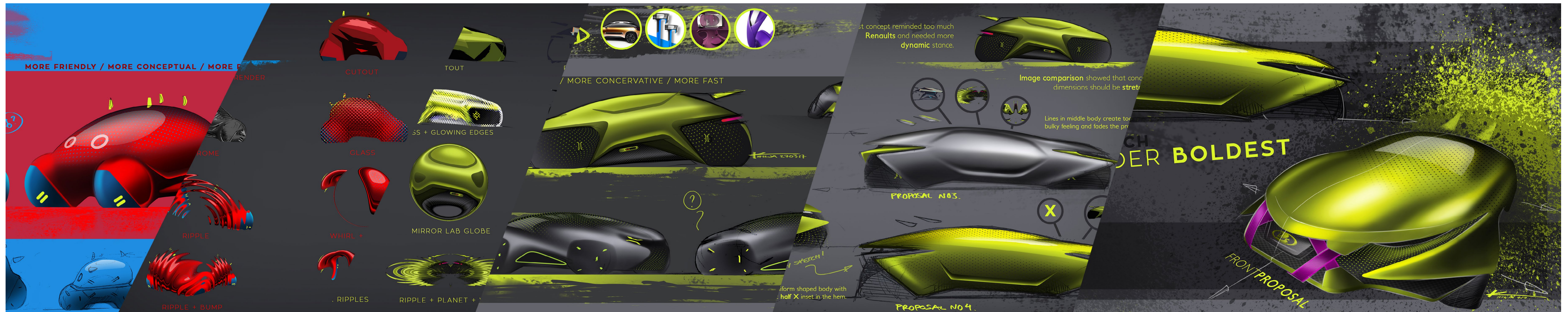
8.3 Conclusion

During this project I've learned widely from many field of study. Understanding social media's methods helps me to benefit from them more, but also learning and actually knowing about new ways of design and technology is inspiring.

Working for iconic yet remote brand has been intriguing and I have learned about Lada and its future scenario a lot but also made me a fan of the brand.

I had very good basis for graduation project as I was mentored by Lada designer, who sees the project from industry point of view.

With my project I want to inspire designers, engineers, industry and social media users to consider of how their activity and information that they share in social media could be transformed into something completely different.



References & annex

Cover

Gego (Gertrude Goldschmidt), Reticulárea, (1969)

http://68.media.tumblr.com/4c42958e1c3e27549d4fb80d5ee7a476/tumblr_most1bj4eG1r9xcmt01_1280.jpg

10.10.2017

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<https://www.youtube.com/watch?v=CvSOaYi89B4>

08.11.2017

<https://www.youtube.com/watch?v=gOKVwRlyWdg>

08.11.2016

<https://www.youtube.com/watch?v=aR5N2Jl8k14>

03.03.2017

<https://www.youtube.com/watch?v=gOKVwRlyWdg>

15.11.2017

Algorithms to Live By: The Computer Science of Human Decisions

Authors Brian Christian and Tom Griffiths

Algorithms Unlocked

Author Thomas H. Cormen

Images

Lada XCode

<https://s2.paultan.org/image/2016/08/lada-xcode-7-1200x652.jpg>

10.10.2016

Gego (Gertrude Goldschmidt), Reticulárea, (1969)

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10.10.2017

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23.03.2017

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23.03.2017

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12.02.2017

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<https://www.wired.com/2013/10/would-you-walk-across-this-cloud-like-bridge/>

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ALGORITHMS AS DESIGNERS

Hilja Kaitila Vehicle design
Graduation project **2017**

