GIULIA LACO

VARIABLE FONTS THE FUTURE OF TYPOGRAPHY HAS ALREADY BEGUN

WORDCAMP MILANO 2019



DEFINITION



VARIABLE FONTS

PREMISE



TYPEFACE

concept

Roboto

TYPEFACE FAMILY

roman, italic, condensed, extended

FONT

file

Thin

Thin Italic

Light

Light Italic

Regular

Regular Italic

Medium

Medium Italic

Bold

Bold Italic

Black

Black Italic

FONT FAMILY

font-family (CSS)





TYPEFACE FAMILIES

beginning of 1500

1700

1900

Roman vs. Italic – different types

First typeface families (Roman and italic pairing)

Bigger families (condensed, extended)





ENGLISH

Character width

COMPRESSED CONDENSED REGULAR OR MEDIUM WIDE **EXTENDED**

Character weight

EXTRA LIGHT LIGHT OR THIN REGULAR OR MEDIUM **SEMIBOLD BOLD** EXTRA BOLD OR BLACK

ITALIAN

STRETTISSIMO STRETTO NORMALE **LARGO** LARGHISSIMO

CHIARISSIMO CHIARO NORMALE NERETTO NERO NERISSIMO





WHO ASKED FOR VARIABLE FONTS?



VARIABLE FONTS

THE PROPONENTS

OpenType Font Variations

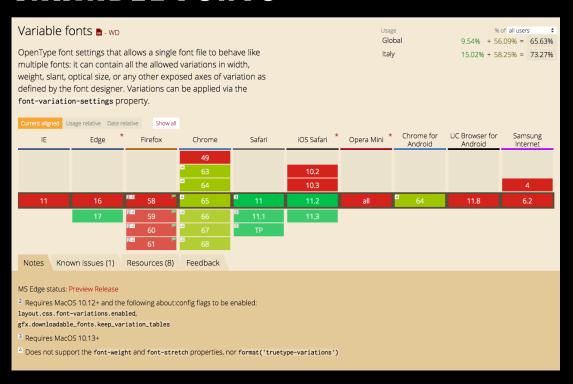


BROWSER SUPPORT



BROWSER SUPPORT (source: CAN I USE)

VARIABLE FONTS



March 2018

9,54% Global usage





BROWSER SUPPORT (source: CAN I USE)

VARIABLE FONTS



March 2019

78,26% Global usage





BROWSER SUPPORT (source: CAN I USE)

VARIABLE FONTS

Variable fonts ■ - wp Usage % of all users Global 87.1% + 0.5% = 87.6% OpenType font settings that allows a single font file to behave like Italy 90.11% + 0.13% = 90.24% multiple fonts: it can contain all the allowed variations in width, weight, slant, optical size, or any other exposed axes of variation as defined by the font designer. Variations can be applied via the font-variation-settings property. 3.2-10.3 54-63 6-10 Known issues (1) Resources (8) Works with Experimental Web Platform features enabled Requires MacOS 10.12+ and the following about:config flags to be enabled: layout.css.font-variations.enabled. gfx.downloadable_fonts.keep_variation_tables Requires MacOS 10.13+ Does not support the font-weight and font-stretch properties. Does not support format('truetype-variations'), format('woff-variations'), format('woff2-variations') Does not support OpenType-CFF2 fonts

November 2019

87,01% Global usage





WHAT IS A VARIABLE FONT?



OpenType



OpenType 1.8





— John Hudson, Sept. 2016





"STATIC" FONTS

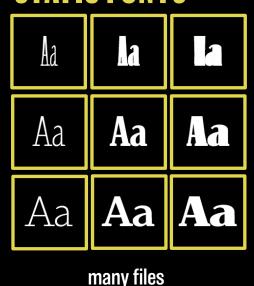
VARIABLE FONTS



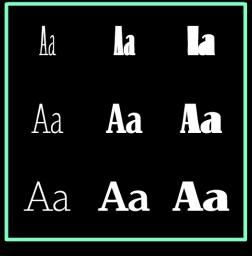


FILE DIFFE

STATIC FONTS



VARIABLE FONT



one file



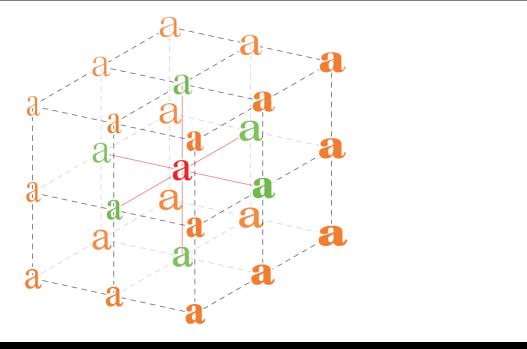
A variable font is a single font file THAT BEHAVES LIKE multiple [static] fonts.





VARIATION AXES

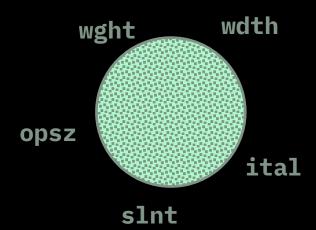




https://medium.com/variable-fonts/https-medium-com-tiro-introducing-opentype-variable-fonts-12ba6cd2369



REGISTERED AXES



CUSTOM AXES



REGISTERED AXES



- 1. Weight
- 2. Width
- 3. Optical Size
- 4. Slant
- 5. Italic



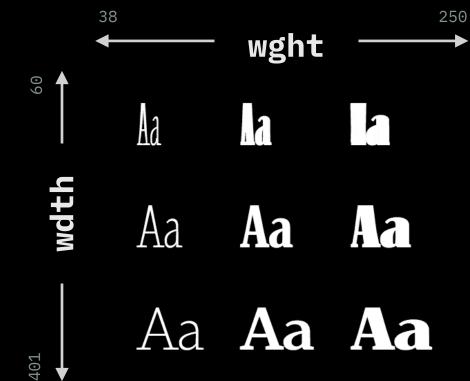


Aa Aa Aa

2019 © Giulia La

Width

Weight





Optical size







OPTICAL SIZE

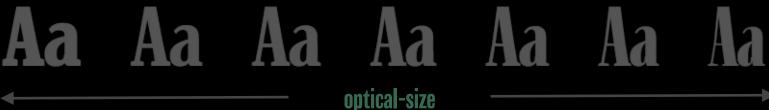
METAL TYPES





optical-size + font-size





optical-s

FOR BIG SIZES

2019 © Giulia



Slant

slnt

Aa Aa <u>Aa</u>





Italic



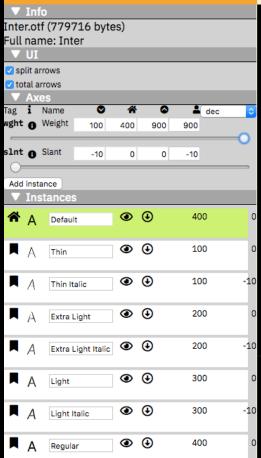
af

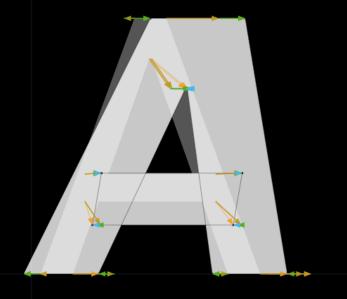




VARIABLE FONTS TERPOLATION

Samsa Inter.off







Samsa - inspection tool https://github.com/Lorp/samsa

slnt

An experiment in italicization, this one-off member of the Roslindale type series can vary its italic forms separately from the angle of slanting. The vast majority of typefaces change italic forms along with slanting, so this may be the first case of

both the registered 'italic' and 'slant' axes being used in the same variable font. DIR Characters: 2019-01-01 Paid/commercial

Roslindale Variable Italic

Publisher:

Release:

Licensing:

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 01234567

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> 2019-01-01 Paid/commercial

Info/fonts:

Roslindale Variable Italic

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopgrstuvwxyz 01234567



CUSTOM AXES



Recursive



>64.000





Serif Rise

Width

Weight

xHeight

Ricardo Magalhães https://blog.prototygr.io/what-does-variable-fonts-mean-for-web-developers-2e2b96c66497





TOO MANY?



NAMED INSTANCES



AXISPRAXIS

Introduction
MY SPECIMENS

SPECIMENS

T ROOT UI

方正悠黑

文鼎晶熙黑 晶熙ゴシック体 Amstelvar

Avenir Next

Buffalo Gal Compressa

Decovar DIN 2014

Dunbar

Gingham Gnomon

Grade Hela

Jabin dT Jakob Jam Kairos Sans Lab-DJR Libre Franklin

Bitcount Bree playground

Gingham Gingham **Gingham**

Gingham is an experimental variable font by Christoph Koeberlin. It has two axes, weight and width. It has very limited character set consisting of the upper and lowercase basic Latin alphabet, plus a little punctuation. The font is based on an unfinished design and comes without warranty.

Gingham Gingham

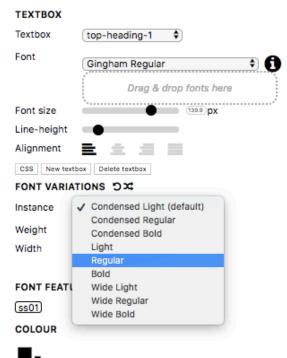




gham ingham Gingham

erlin. It has two axes, weight and ery limited character set consisting of lowercase basic Latin alphabet, plus a

on. The font is based on an unfinished



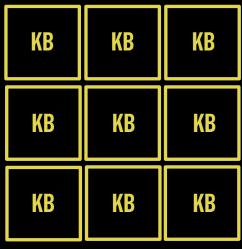
ADVANTAGES



PERFORMANCE



WEIGHT



VARIABILE FONT





PERFORMA

REMEMBER TO

- use the compressed format: woff2
- consider to do a subsetting (depending on the licence)
- use web font loading best practices





OPTICAL SIZE



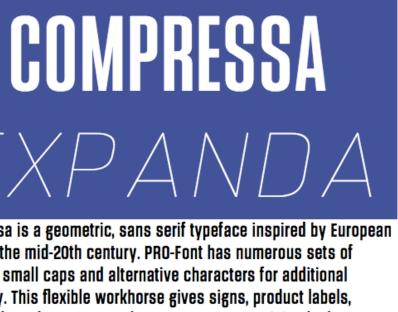
Aa Aa Aa Aa Aa Aa





FINE TUNING





ds and sports team logos an uncompromising look. pportions, fit and details are designed for allest dimensions and each of its weights

dths contains the most important feature liable text surface. Enhanced fonts with hapes and fractions allow designers to e fonts for the most complex information.

impressa is characterized by a wide of instances, from thin condensed to

ExtraCn UltraLight It

TEXTBOX

Textbox

Font size

Line-height

Font

ExtraCn Light It ExtraCn Regular It ExtraCn Medium It

> ExtraCn Bold It ExtraCn Black It ExtraCn Heavy It

Cn Thin Cn UltraLight Cn Light

ExtraCn Heavy ExtraCn Thin It

Alianment Cn Regular CSS New tex Cn Medium Cn Bold FONT VARIA Cn Black

> Cn Heavy Cn Thin It

Cn Light It

Cn Bold It

Cn Regular It

Cn Medium It

Cn UltraLight It

Instance Weight Width

Italic

Cn Black It FONT FEAT Cn Heavy It (aalt) (c2sc) Neutral Thin

Neutral UltraLight (liga) (Inum) Neutral Light sinf smcp

COLOUR

Neutral Regular Neutral Medium

> Neutral Thin It Neutral UltraLight It

Neutral Light It

Neutral Bold It Neutral Black It

Neutral Heavy It Exp Thin

Exp UltraLight Exp Light

Neutral Regular It Neutral Medium It

Neutral Bold It





frac (ital)

[pnum] [salt] zero

ADAPTATION TO LANGUAGES



RESPONSIVE / FLUID WEB



DISADVANTAGES



CHOICE



PRICE



CRIMINAL POTENTIAL ©

typographic crimes



IMPLEMENTATION



CSS PROPERTIES



font-variation-settings: "wght" 54;

```
font-variation-settings:
    "wght" 38, "wdth" 401;
```

```
font-variation-settings:
    "wght" 38, "wdth" 401, "opsz" 203;
```



TAXIS



LOW LEVEL CSS font-variation-settings:

CSS4

Weight

"wght" 38 font-weight: 38; [1-999]

Width "wdth" 125 font-stretch: 125%; [100% is normal]

Optical size "opsz" 51 font-optical-sizing: auto; [auto/none]

Slant "slnt" 15 font-style: oblique 15deg; * [-90deg-90deg]

Italic "ital" 1 font-style: italic; * [italic/normal]

* Add font-synthesis: none;

FALLBACK: FONT STACK



(generic name)

font-family: "Typeface VF", "Typeface", Helvetica, sans-serif; **Static webfont** Variable webfont websafe system default system font

font





```
body {
  font-family: "Typeface", sans-serif;
}
```

```
@supports (font-variation-settings: normal) {
  body {
   font-family: "Typeface VF", sans-serif;
  }
}
```



@FONT-FACE



@font-face {

```
font-family: "Typeface VF";
src: url('Typeface VF.woff2') format('woff2-variations'),
      url('Typeface_VF.woff2') format('woff2');
@font-face {
 font-family: "Typeface";
src: url('Typeface_Regular.woff2') format('woff2');
@font-face {
font-family: "Typeface";
 src: url('Typeface_Bold.woff2') format('woff2');
 font-weight: 700;
```

GOOGLE FONTS API



CURRENT API FOR STATIC FONTS

//fonts.googleapis.com/css?family=Roboto:700

NEW API FOR VARIABILE& STATIC FONTS

//fonts.googleapis.com/css2?family=Roboto:wght@700





WHERE CAN I FIND THEM?



GOOGLE FONTS EARLY ACCESS

```
@import url(https://fonts.googleapis.com/earlyaccess/cabinvfbeta.css);
@import url(https://fonts.googleapis.com/earlyaccess/amstelvaralpha.css);
@import url(https://fonts.googleapis.com/earlyaccess/nunitovfbeta.css);
```





Oswald

Quicksand

Family	Style	Axis	Min	Max	Demo	"GOGIE With
Comfortaa	normal	wght	300	700	Lorem ipsum	COOGLE FONTS APP
Crimson Pro	normal	wght	200	900	Lorem ipsum	AP
Crimson Pro	italic	wght	200	900	Lorem ipsum	
<u>Dosis</u>	normal	wght	200	800	Lorem ipsum	
Fira Code	normal	wght	300	700	Lorem ipsum	
Hepta Slab	normal	wght	1	900	Lorem ipsum	
Kreon	normal	wght	300	700	Lorem ipsum	
<u>Literata</u>	normal	wght	400	700	Lorem ipsum	
<u>Literata</u>	italic	wght	400	700	Lorem ipsum	
Markazi Text	normal	wght	400	700	Lorem ipsum	

Lorem ipsum

Lorem ipsum



Twenty Twenty theme



C Twenty Twenty

TRAVEL

My Most Memorable Travel Moments

The best moment of any trip, for me, is when I first step foot off the train (or boat, or plane, or bus, or...).

△ Joan Smith ③ August 15, 2019
☐ 3 Comments

he whole of the trip is in front me, ripe with possibility. Now Leontes' eyes were at last opened to his folly. His Queen was dead, and the little daughter who might have been a comfort to him he had sent away to be the prey of wolves and kites. Life had nothing left for him now. He gave himself up to his grief, and passed in any sad years in prayer and remorse.



This is a left-aligned pullquote! When screen size allows, you'll find me to the left of the content.

Albert Einstein

The baby Princess was left on the seacoast of Bohemia, the very kingdom where Polixenes reigned. Paulina's



- Check your creative software
- Font distributors & market places
- ... ask your trusted foundry



TOOLS



TOOLS

axis-praxis.org

AXISPRAXIS

playground

blog

resources

donate

@ O ~ # Y E

Introduction

MY SPECIMENS

_

SPECIMENS

TRoot UI 方正悠黑 文鼎晶熙黑 晶熙ゴシック体 Amstelvar Avenir Next Bitcount Bree

Buffalo Gal

Compressa

Decovar DIN 2014

Dunbar

Axis-Praxis is a website for playing with OpenType Variable Fonts

Discover 30+ variable fonts. Experiment with the typographic controls in the right panel on this default layout, or choose a typeface specimen from the left column. Every textbox is fully editable: change font, font size, alignment, linespacing as well as the variation sliders. And type your own text, of course.



Font makers can try out their own variable fonts. Just drag any variable TTF to the right panel, the current textbox gets set to that font, and its axes show up right away in the Font Variation section.



FONT FEATURES

Optical Size

c2sc calt case dnom frac liga (num locl

(numr) (onum) (pnum) (sinf) (smcp) (ss01) (subs) (sups)

COLOUR



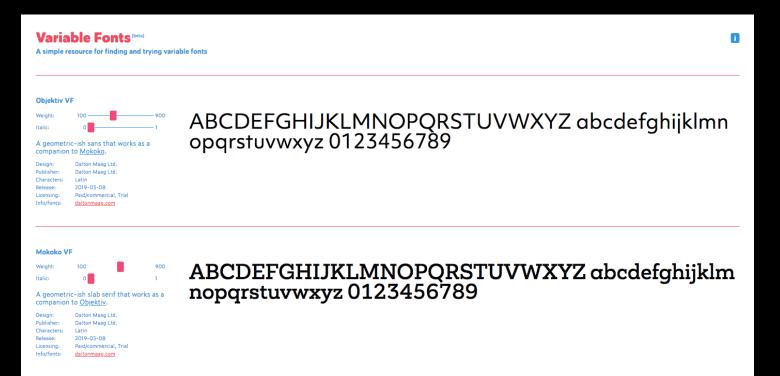




VARIABLE FONTS

TOOLS

v-fonts.com

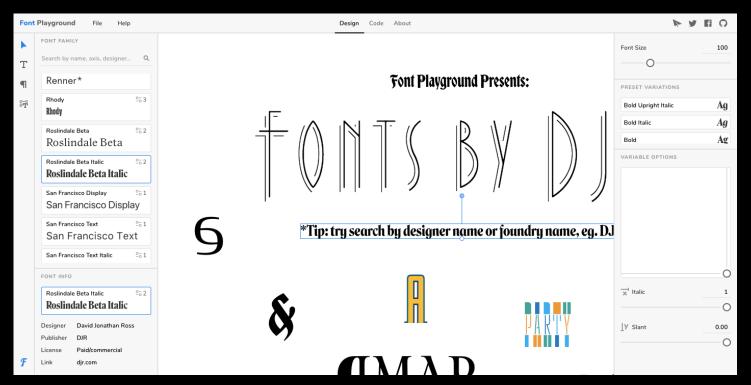




VARIABLE FONTS

TOOLS

play.typedetail.com

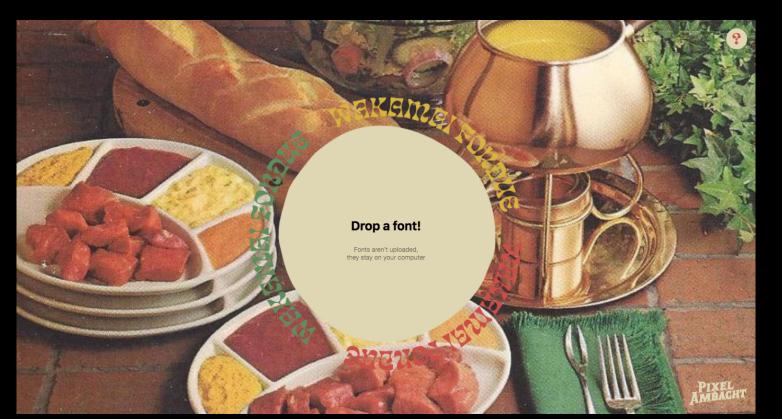






TOOLS

wakamaifondue.com







POTENTIALS



MULTIMEDIA INTERFACES



INPUT

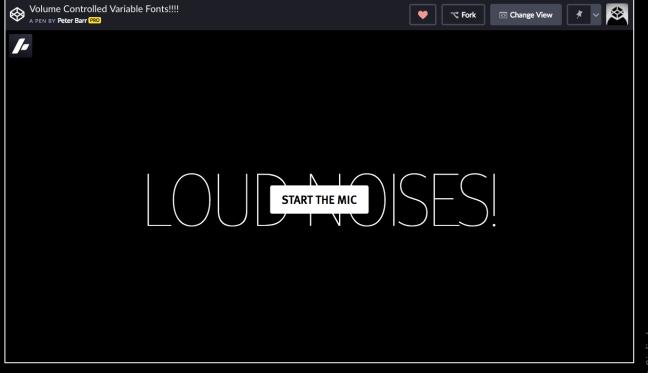
PHONE MOVEMENT

VARIATION AXES: WEIGHT, WIDTH









VARIATION AXES: WEIGHT, WIDTH

A pen by Peter Barr https://codepen.io/petebarr/full/yCeMxr



INPUT

PRESSURE SENSOR DEVICE



VARIATION AXES: WEIGHT





ADAPTATION TO THE ENVIRONMENT



VARIABLE FONTS

AXISPRAXIS

playground

blog

resources

donate

0 0 0 B W E

Introduction

MY SPECIMENS

SPECIMENS

T Root UI 方正悠黑 文鼎晶熙黑 晶熙ゴシック体

Amstelvar Avenir Next Bitcount

Bree **Buffalo Gal**

Decovar **DIN 2014** Dunbar Fit

Gingham Gnomon

Grade Hela

Jabin dT Jakob Jam

Kairos Sans Lab-DJR Libre Franklin Grade

A variable font of 2 axes by Adam Twardoch, based on a design by Pablo Impallari, intended to demonstrate smooth variation in typographic grade

the technology used for display or printing, sometimes appearing lighter or darker than desired. The type of paper, the type of ink, and other aspects of the printing process can all affect font weight significantly. For example, printing using offset lithography is pretty faithful to original lettershapes, while the gravure method causes some spread. Similar problems occur when using white-on-black text, when fonts appear heavier than black-on-white. whether on paper, screen or illuminated displays.

To address this problem, it is becoming increasingly common for type designers to offer a selection of weights, called 'grades', intended so that the designer can choose the appropriate weight for each situation. Variable adjustment of grade offers grade to readers of online texts, as well as offering the designer the ability to set a well-chosen default, given the characteristics of a rendering device or colour combination.

Font appearance varies depending on Font appearance varies depending on the technology used for display or printing, sometimes appearing lighter or darker than desired. The type of paper, the type of ink, and other aspects of the printing process can all affect font weight significantly. For example, printing using offset lithography is pretty faithful to original lettershapes, while the gravure method causes some spread. Similar problems occur when using white-on-black text, when fonts appear heavier than black-on-white. whether on paper, screen or illuminated displays.

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Grade

Hela Jabin dT Jakob Jam

Gnomon

Grade

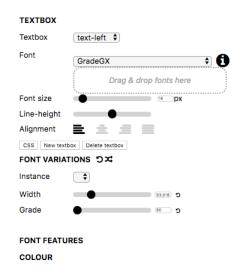
A variable font of 2 axes by Adam Twardoch, based on a design by Pablo Impallari, intended to demonstrate smooth variation in typographic grade

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Grade

Hela Jabin dT Jakob Jam

Gnomon

Grade

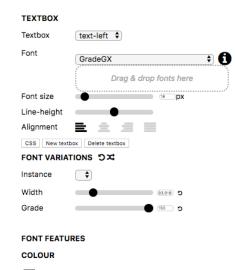
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https://www.axis-praxis.org/



VARIATION AKES: GRADE





Changing font grade (weight irrespective of width) based on ambient light. "Heavy" font in low-light. #typography @q42

Traduci il Tweet



21:31 - 1 mar 2017

230 Retweet 453 Mi piace



















INPUT DISTANCE FROM SCREEN



VARIATION AKES:

GRADE?, X-HEIGHT



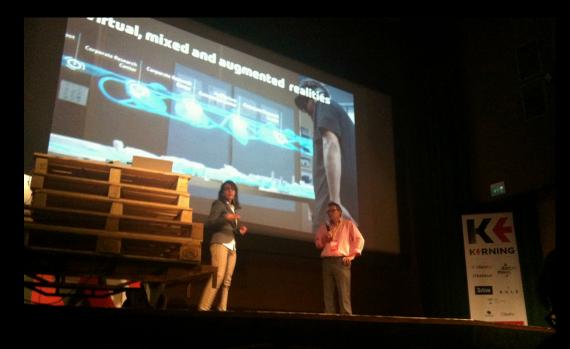


NEW ENVIRONMENTS



Fonts for Augmented/Virtual Reality

INPUT CAMERA, DATA ...



VARIATION AKES: PROSPECTIVE AXES

Alessia Nicotra & Bruno Maag Kerning conference, Faenza - June 8°, 2018









Harrakech Hoscow Padova Lyon Rennes Tokyo Johanneshurg Beijing San Francisco Savissivik Tolhuin Tignes

VARIATION AXES: WEIGHT SLANT

A pen by François Poizet https://codepen.io/FranzPoize/pen/ayYevr





ANIMATIONS (SEMANTIC?)



ACCESSIBILITY, PARTICULAR NEEDS



EXPRESSIVENESS



EXPRESSIVENESS

anxions

sound

sound

sound

sound

sound

calm

active static





EXPRESSIVENESS

30 mlm 10 mlm 20 mlm 10 mlm 20 mlm 40 mlm 40 mlm 10

Act now Wake up

Laugh

Think

Calm down

Sleep

+ energy

+ calm





Thank you

for your attention



Keep in touch



Subscribe to my newsletter

TYPE STRATEGY



www.typestrategy.com

and show me your creations with variable fonts!

Balboa Condesed

Balboa ExtraCondesed

Balboa UltraLight

Balboa Light

Balboa Medium

Balboa Bold

Balboa ExtraBold

Balboa Black

Balboa ExtraBlack

Carl Marx regular

Carl Marx bold

Bree serif regular
Bree serif italic

IBM Plesk Mono medium



