



This deck presents Roboto Extremo, the new version of the family with basic, intermediate and advanced variation capabilities.

Basics: Prototype Glyphs

First, a limited ASCII ascii glyph was produced with the fullest range of functionality, to test performance, and the key type design quality questions raised by this sans-serif design.

Basics: Current Glyphs

```
!"#$%&'()*+,-./0123456789:;<=>?
@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmno
pqrstuvwxyz{|}~ |¢£x¥¦§"©ax¨-°±23
´µ¶·¸¹º»¼½¾¿ÀÁÂÃÄÄÄÆÇÈÉÊËÌÍĨÏÐÑÒÓÔÕÖרÙÚÛÜÝÞßàáâ
ãäåæçèéêëìíîiðñòóôõö÷øùúûüýþÿĀāĂ㥹ĆćĈĉĊċČčĎďĐđĒēĔ
ĕĖėĘęĚěĜĝĞġĠġĢģĤĥĦħĨĩĪĭĬjĮİIJijĴĵĶķĸĹĺĻĮĽľĿŀŁłŃńŅņŇňďŊŋ
ŌōŎŏŐőŒœŔŕŖŗŘřŚśŜŝŞşŠšŢţŤťŦŧŨũŪūŬťťŮůŰűŲųŴŵŶŷŸŹź
ŻżŽžƏfOoUuDŽDždžLJLjljNJNjnjĞğQoÅåÆÉÓÓÄäÂâËèÊêÌìÎîÖ
öÔôR¡ŔîÜùÛûŞṣṬţÖöŌōŌōŌōŌōŌōŌō¸""´´¸°¸°¸°¸°¸°¸°\WWWWWWßAạẢđ
ÁãÂâÂãÂãÂãÂãÁåĂăĂăĂăĂăĂĕĘeÉeĔeÉeÉEêÉêÉêÉêÍệÍ¡¡¡OọOdôÓÓÔÔÔÔ
--\tilde{\hat{Y}}
-","","†‡•...%o'"<>//。⁴₡₣₤₦₧₩₫€₭₱₲¢₹₺⋔₽№™-/・≈≠≤≥<>ffffiflffiffl
```

The current glyph set is the "Google Latin Plus" set, which has the essential Latin glyphs that supply a broad typographic pallet.

Basics: Final Glyphs

ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^ `abcdefghijklmnopgr stuvwxyz¥¦§"©a«¬±²³µ¶·¸¹º»¼½¾¿ÀÁÂÃÄÅÆÇÈÉÊËÌÍĨÏÐÑ ÕÖרÙÚÛÜÝÞßàáâãäåæçèéêëìíîïðñòóôõö÷øùúûüýþÿĀāĀ㥹 ĆćĈċĊċČčĎďĐđĒēĔĕĖėĘęĚįĠĜĠĞĠĠĤĥĦħĨĩĪŢĬĭĮįİıIJijĴĵĶķĸĹ OőŒœŔŕŖrŘřŚśŜŝŞşŠšŢţŤťŦŧŨũŪū ŬŭŬůŰűŲųŴŵŶŷŸŹźŻ**ĬĚĦ₽ĦĦĦŀĬ**ŒDāāq∃ƏEFfĞYbl+K ŔŧλϢŊηΘΟσΟΊοΥΡΡΑΖΑΣΧΙΧΤΕΤΥΙΚΟΎΥΥΖΞ3ΕξΞ25ssp|||‡! DždžLJLjljNJNjnjĂăĬĭŎŏŲuŪūŪūŪūŪūāÄāĀ⯿GqĞaKK əÄäA⯿GqGğKkQo ŌōŠžĬDZDzdzĠģHJPNnĂ寿ØøÄäÂâËëÊêÏïlîÖöÔôRïŔrÜüÛû SsTt33Hhndb8ZzAaĘęÖöÖöÖöÖöÖöİylntıdopA¢¢LTsz??B ŰΝΘŒΘΦΊΊΊΙΙ∪ĸĸέĴĮĴŢĬſ#ΩΝΥΝΥλŹŹŹŚĮĮCOBΘĊHŤĂľďŚ¿qz

The final glyph set will contain, the extended glyph set required for Latin, Greek and Cyrillic .

Basics: Styles

ROBOTO Classic styling The old look and feel of an existing popular family the smaller footprint for superior performance ROBOTO **Classic styling**

ROBOTO **Extremo** styling The old look and feel of an existing popular family the smaller footprint for superior performance ROBOTO **Extremo styling**

Extremo contains the same instances as Roboto, so it can be used to replace it with higher performance due to the smaller size of the family. It can also greatly simplify user interface experiences and increase design flexibility.

Basics: Design Space

Basics: Design Space

144 point

60 point

24 point

14 point

8 point



Aa Aa Aa Aa Aa Aa Aa

Aa Aa Aa Aa Aa Aa

Aa Aa Aa Aa Aa Aa Aa Aa Aa

Aa Aa Aa

The style range gets wider, narrower, bolder and lighter as the optical size grows over the full range of sizes from 8 to 144, for a full range of styles at every size.

Basics: Design Space

144 point Basics: Design Space

The broadest range of style in 144 pt, contains the narrowest widths, 25% of the normal width, as well as the widest that are 151% of the normal width. These display sizes are more economical in space, as legibility is never challenged.

Basics: Design Space

144 opsz 144 point 400 weight

8 opsz 144 point 400 weight

AAAAAAAAA

8 opsz 8 point 25 styles Aa

144 opsz 8 point 25 styles la Aa Aa Aa Aa Aa la Aa Aa Aa Aa Aa Aa Aa Aa Aa

The narrowest range of style in 8 pt, containing widths, 65% of the normal width, as well as the widest that are 120% of the normal width. These small text sizes are more legible, especially when compared to the 144 point designs at the same size

Basics: Design Space

Far quick brown foxe Sweep over the lazy sleeping of Pack my bag with six dozen jugs of w Jabbering boulevard strangers quizzed puzzled vis Parking attendants worried when the zebras quite juggling the sleeping Masterful planning before the trip enabled the client, a Quaker family to all the peace Everyone knew that the particle accelerator would not function in zero gravity but planned the experimen Practical application of the necessary variables created a greatly simplified hierarchy over the broad range of nutritions The typical North American composition of text does not normally involve extensive testing for legibility a Magnification of issues into unmanageable specifications, quietly but certainly, raised the price of everything they did, FILE EDIT PRINT VIEW ARRANGE WINDOW PAGE MORE LESS STANDINGS STATISTICS SIGN IN LOG OU This year's winning photograph from the south of England was taken on January 2 in Queen Anne's Park, South Chouldchester, between ECUADOR EGYPT EL SALVADOR EQUATORIAL GUINEA ETHIOPIA FIJI FINLAND FRANCE GABON GAMBIA GEORGIA GERMANY AND MAS

When applied to a deep hierarchy of one style, Regular, over a range of sizes from 10 to 96, the stylistic distribution of variation over the Roboto Extremo's opsz and wght ranges of the design space, provide a consistent foundation on which to

Typical Practice: Using a range of weights at each size.

Roboto 12 Light Regular Medium and Bold

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

RobotoExtremo 12 Light Regular Medium and Bold

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

Roboto 24 Light Regular Medium and Bold

Bewildered boulevard strangers quizzed puzzled visitors on the way to

Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way Bewildered boulevard strangers quizzed puzzled visitors on the way

RobotoExtremo 12 Light Regular Medium and Bold

Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boule

Once on a consistent foundation of Regular, users can safely switch among 4 weights, Light, Regular, Bold, Medium and Bold, at any size.

Typical Practice: Using a range of styles of each weight at a range of sizes

RobotoExtremo 12 Light (200), with its Italic, Bold and Bold Italic

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

RobotoExtremo 12 Regular (400), with its Italic, Bold and Bold Italic

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

RobotoExtremo 24 Light (200), with its Italic, Bold and Bold Italic

Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to the Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to

RobotoExtremo 24 Regular (400), with its Italic, Bold and Bold Italic

Bewildered boulevard strangers quizzed puzzled visitors on the way to Bewildered boulevard strangers quizzed puzzled visitors on the way to the Bewildered boulevard strangers quizzed puzzled visitors on the way Bewildered boulevard strangers quizzed puzzled visitors on the way to the w

After a consistent set of weights provides the designer with the ability to define distinction of adjacent text objects, distinction within each text object for whatever other purposes is simplified. This gives the designer two distict level of styling, on generally for navigation of the page, and the other generally under editorial influence.

Typical Practice: Using grades on styles of particular weights at a range of sizes

RobotoExtremo 12 Light (200), with its Italic, Bold and Bold Italic

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

RobotoExtremo 12 Light (200), Dark Mode

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

RobotoExtremo 12 Light (200), Dark Mode with Grade axes correction

Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going Bewildered boulevard strangers quizzed puzzled visitors on the way to the park where the band was going

Control of thin weights in dark mode can also be applied with care over the range of sizes and weight to ensure comfortable reading.

Progress Brief:

Basics: Design Space

- ✓ Pilot a new process, (optical size masters first, parametrics second)
- ✓ Design a broader stylistic range than Roboto
- ✓ Define system of transitions along axes with intermediate masters
- ✓ Include visually backward-compatible Roboto replacement
- Expose useful parametric ranges to compliment the stylistic range
- Define Useful Parametric Ranges to compliment the stylistic range
- Collaborate on print and web specimen development
- Extend to Greek and Cyrillic

Piloting took nearly 18 months from just being able to draw the fonts required for variables, to producing stable reproducable scripted versions via repository. This allowed us to make a very broad range of styles in Extremo. But that also required a stable and effective set of proofing tools to see all the styles and all the sizes in actual use on the web and in print. Then another year passed before a fully functional enduser product, (Sketch), made possible the adjustments and comparison of the fourth item, a backward-compatible Roboto replacement.



Testing now is underway on all Latin and extended glyphs for the axes shown in this presentation (wght, slnt, GRAD and opsz), as well as the width axes, (wdth). All of the capabilities in the font that are aimed at compression and simplified expression of complex typographic systems by the user, are now available.

The presentation continuing below is aimed at improved typography within paragraphs of texts in the Latin script, and in adjsting Latin to other scrupts that don't have any paramtric axes, among other things.

WITH GEORGIAN

არა ეს საქართველო, Athens ერთი ევროპასა და აზიის მთებში. გაცილებით ძველია გაერთიანებულ შტატებში, მაგრამ უფრო მცირე მოსახლეობით. Nothing runs like a deer.

WITH ARABIC

أباد الله خضراءهم ابذل لصديقك دمك ومالك اتَّكَلْنا منه على خُصِّ London & Wales الاتحاد قوة اتق شر الحليم اذا غضب اجتنب Hark, I hear a مصاحبة الكذاب فإن اضطررت إليه فلا تُصدِقهُ voice speaking!

WITH HEBREW

לעולם יירשו ארץ. נצר מטעי מעשה ידי להתפאר. א.

Improved Justification with XTRA

YOPQ 50; CW 41; LH 1.18

I remembered the case well, for it was one in which Holmes had taken an interest on account of the peculiar ferocity of the crime and the wanton brutality which had marked all the actions of the assassin. The commutation of his death sentence had been due to some doubts as to his complete

ws 42

ws 473

ws 138

ws 152

ws 804

ws 18

ws 413

YOPQ 50; CW 43; LH 1.18

I remembered the case well, which Holmes had taken account of the peculiar fero and the wanton brutality which the actions of the assassin. To finis death sentence had be doubts as to his complete sail

50; CW 41; LH 1.18

Improved Justification with XTRA

membered the case well, for it was one in ich Holmes had taken an interest on count of the peculiar ferocity of the crime the wanton brutality which had marked the actions of the assassin. The nmutation of his death sentence had been to some doubts as to his complete ity, so atrocious was his conduct. Our gonette had topped a rise and in front of rose the huge expanse of the moor, ttled with gnarled and craggy cairns and s. A cold wind swept down from it and set shivering. Somewhere there, on that solate plain, was lurking this fiendish man, ing in a burrow like a wild beast, his heart of malignancy against the whole race ich had cast him out. It needed but this to nplete the grim suggestiveness of the ren waste, the chilling wind, and the kling sky Even Baskerville fell silent and

WB 42 WB 473 ws 138 ws 152 ws 804 ws 18 ws 413 ws 304 ws 127 WB 452 ws 143 WS 42 WS 557 WS 27 ws 42 ws 339 ws 48 WB 439 ws 446

we 170

YOPO 50; CW 43; LH 1.18 I remembered the case well, for it was o which Holmes had taken an interes account of the peculiar ferocity of the and the wanton brutality which had mark the actions of the assassin. The community of his death sentence had been due to doubts as to his complete sanity, so atro was his conduct. Our wagonette had top rise and in front of us rose the huge exp of the moor, mottled with gnarled and c cairns and tors. A cold wind swept down it and set us shivering. Somewhere the that desolate plain, was lurking this field man, hiding in a burrow like a wild beas

heart full of malignancy against the v

race which had cast him out. It neede

this to complete the grim suggestivene

the barren waste, the chilling wind, an

darkling sky. Even Baskerville fell silen