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| | 1. | | |
| | Lineage K | ogression | |
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| | 1 | | |
| material - ? | Loset | Simplest | linear rogression |
| Tx. | & pit | is of the | re form |
| 9 ** | x pit line | <u> </u> | |
| | Data | (1 = m7 | c + b . 1 . 11 |
| × | points | 1 20 11 | realure bios |
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| X | | Stork | <u> </u> |
| | 1/1 | weight | |
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| This uses | or a |) (Q=j' | , |
| dataset | navina e | ne sealure | one target, |
| Such datas | la aro | en place | ed in |
| handia (| Timo sogios | io oinnilas | ed in sut different). |
| 100000C | | * | |
| 20 11010 | 1 2110 1. | A. ition Mal | en we have |
| | A GUSE M | 1) MINOVE W | <u>en</u> we need |
| multiple | plante. | | |
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| $9=6,\infty$ | + 0, X 2 | 13-Bn | $X_{n} = X_{0}$ |
| 7 17 17 | | | |
| Darget | .d Inc | all my red | roschoend |
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| Slepter weights | | Southers | implement. |
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| 3 to 11 22) | ショス機関 対析 | 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 31 |
| - Chinah Fall | 11.36.3521 | O bill held | No all |
| Compact yell willham | "Education is the manifestation of | perfection already in a man " _Swami Vi | / A A A |
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| | Tues users to abdate assign | 1 1 |
| | Tues ways to whate weights and | d legage |
| 01/828-11 | 1) Of S (Oridinary Least Squares 2) Gradient Descent | .) |
| | Ordinary Loast Squares | |
| (Proceedings) | - Tarious Contracts | |
| Slope | $m = \underbrace{\mathbb{E}(x; -\overline{x})(y; -\overline{y})}_{i=0}$ | |
| | $\sum_{i=0}^{\infty} (x_i - \overline{x})^2$ | |
| lojas | b= y-mx ushero x y = moran | |
| | | - |
| ,211 | Lets now broise these: | |
| | 0000= (y-g)2+(y-g)2+(y-g)7 | |
| | 19908 = \(\begin{array}{c} (y; - \hat{y})^2 \\ \end{array} | |
| Barre | But we know g.= mx+b. | 2 |
| A 3 5 | Using (1) in (1) | et _ 25 _ 1 |
| | lacon = = (y:-(mx:+b:)) | ~ |
| | The state of the s | |
| | Los reduce this error use he | us to |
| | and b (as they can only seduce) | m 000000 |
| Chitrá | "It is the prime responsibility of every citizen to feel that his country." —Sardar Vallabhai Patel | in nator) |

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| Solcino | 7 |
| | p;))=0 |
| 90 | · 5 1 - 2 - 7 |
| and | .2 |
| d&(y; - (m)x; + | bi))=0 |
| dm 100 21 Fr 21/21 | of the Charles Tracks |
| | |
| Lets solve this | THY - I - I |
| Columnia he |)) (-1) = 0 0/m |
| £2(yi-(mxi+bi | $\frac{1}{1}$ |
| Con Contraction of the Contracti | |
| |)) = 0 |
| Ecgi-(mx; +bi | this is just |
| C - (- C - C - C - C - C - C - C - C - | nulee of bices |
| | features |
| usim 3) use out | - 12011 - 1111 |
| | She = Nh |
| $\leq yi - (mx_i + nb)$ | =0.11-10, -3 |
| | |
| ≤y:- ≤mx: + nb | |
| | |
| Divide by n ue | top |
| 0 | 0 |
| ≥y: - m/Ex; - pb | = 0 |
| n n | |
| V | - (1) 4. |
| <u> </u> | |
| 9-mx-b= | |
| 1 h= 11-m2 | |
| | |
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| Nove. | |
| | |
| dε(y; - (mx; +b;)) - (m) | |
| dm d' - U | |
| | |
| Nous from problem use know | |
| h 17 mm - 0-13 12/1-12 | · · · · · · · · · · · · · · · · · · · |
| b= y-mx-2 | - 1 |
| hels use (5) in (5) | |
| | |
| d & (yi - (mx; + y-mx)) = 0 | A STATE OF THE PARTY OF THE PAR |
| dm dm | |
| (=) (: - (m x ° + (- m x) - / x : - x | $\hat{j} = 0$ |
| = 2(y;-(mx;+y-mx)-(x;-x |) |
| = { (y; - (mx; + g-mx) (x; -2 | $\overline{x})=0$ |
| all the state of t | |
| € (y; - y) - m(x; *x) (x; -x | () = () |
| | |
| $\leq (1 + 1) \leq (2 + 2) = 2 \leq 2 \leq 2$ | -) 2 |
| $\leq (y_i - \bar{y})(x_i - \bar{x}) = m + x_i - \bar{x}$ | - V |
| | The stand |
| V () - () 5 () - () 5 | 1 200 |
| $m = \underbrace{s(y_i - \overline{y})(x_i - \overline{z})}$ | CV. |
| 2(2:-2)2 | |
| 1=0 | |

| Dat | e// |
|--------|--|
| | |
| | Greatient Descent |
| - | |
| | - It is an optimization technique |
| | |
| | |
| Salary | 18,30 |
| 300-0 | ×24,25 |
| | 8,15 |
| | months ! |
| | - 1 1 1 1 1 |
| | use have to find the line (y=mx+b) which |
| | reduces the residual error sum. |
| 7 | |
| | For now los assume m is fixed [m=1] |
| | 1 |
| ľ | (920= (y-9,)+ (y-9,)+ (y3-93)2-0) |
| A X | at a contract of the contract |
| 6 | Our straight line equation at m=1 is y=x+b |
| | 1 = M= 201, b=0 |
| | |
| Salve |) (8,13) - m=1, b=20 |
| | 724,2511 C D D Octor |
| | 162 = (1) 194 |
| | |
| 71 | months it is the second of the |
| - 110 | 7: |
| 6 | we calculated 20 500 |
| | error using O |
|) | since we know both |
|) | m and b and artual is |
| Chitra | "Education is the manifestation of perfection already in (m)n." —Swami Vivekananda |
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| 100 | | • |
| 1 | Tip use plot this lojae and over or (Lose) | |
| | we get | |
| 500 | | |
| 199 | iel solve for more | |
| | Tue solve for more | |
| 6 | minimum are got this curee | |
| | 1. Miller Address of the form of the form of the first | |
| | Lete de some math! | |
| | | |
| | 1088 = E(gi-gi) | 100/04 |
| | · | |
| _ | So por our salvey graph: | |
| | | 2 |
| 1 | Loss = ((8m+b)-15)2+ (24m+b)-25)2+(18m+ | 7-39 |
| | | |
| 100 | Lete calculate the partial derivative | |
| 7 | Lets calculate the partial derivative | |
| \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | - (10 - 1 - 10) x & (1) + 2(1211 x) + 20) = 100 | 10 |
| of (m, p) | $2((8m+b)-15)\times 2((24m+b)-25) = Los$ $+2((18m+b)-30) - 2)$ | d |
| db | + 2((18m+b)-30) - 2) | |
| d) (m, l | b) = 2((8m+b)-15).8 + 48((24m+b)-25)+36(i | 8m+bf-3d |
| -dm | -3 = Loss _m | |
| | M | |
| | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| | | |
| | | |

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| | Tritialize in, and b with some value |
| | say |
| | m=1, $b=2$ |
| | |
| | and suppose wel get Lose = -20 |
| | 1 LOSS m = - 13 |
| 4 | |
| | I multiply Loss, and Loss m. with |
| | T multiply Loss, and Loss m. with 2(Learning rate), Let & be 0.01 |
| | 1/00xb=-20×0.01= = = = = 0.00 |
| | Stoh Stoh |
| | |
| | Stohm=-13×0.01=-0.013- |
| | has get new value for b and m |
| | are ger rette talle for b and m |
| _ | n= eld- Stoh = 2-(-0.003) - 2.00 |
| | no= old- Steho= 2-(-0.002) = 2.023 |
| | nn= oldm- Stehm=1-(-0.013)=1.013 |
| | |
| | wel keep updating this to seach the min. |
| | |
| j | |
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