Ortogonalność i QR Monday, 29 January 2024 23:28
Normy wektorow
$\overrightarrow{\chi}$
$\ X\ _{2} = \sqrt{\sum_{i=1}^{n} X_{i}^{2}}$ $\ V\ _{2} = \sqrt{\sum_{i=1}^{n} X_{i}^{2}}$
$\begin{aligned} \left\ X \right\ _{1} &= \sum_{i=1}^{n} \left X_{i} \right \\ \left\ X \right\ _{\infty} &= \max \left X_{i} \right \end{aligned}$
Norma macieray
$\ A\ = \max\left\{\ A_X: \ X\ = 1\right\}$
$\ A\ _{1} = \max_{1 \le j \le m} \frac{\sum_{i=1}^{n} A_{ij} }{-\max \max kolumy}$
$\ A\ _{\infty} = \max_{i=1}^{m} A_{ij} - \max_{i=1}^{m} A_{ij} - \max_{i=1}^{m} A_{ij} = \max_{i=1}^{m} A_{ij} - \max_{i=1}^{m} A_{ij} = \max_{i=1}^{m$
$\ A\ _2 = \sqrt{\lambda} - \lambda$ to ngivielessa natosé włosna $A'A$ $K(A) = \ A\ \cdot \ A^{-1}\ - współczynik uwanunkonomia$
Blad w vockladzie LV proporajonaly do mox Viji
Morry Halorny
$x,y \in \mathbb{K}^n$
$\langle x, y \rangle = \chi^T \gamma = Z x_i \gamma_i$
$\langle X_1 X \rangle = \sum_{i=1}^{2} >0$
Naolokveslone uklasly Chany zminimalizanora Ax*-b ,
When x^* openin $A^TAx^k = A^Tx^*$
Dodatnis skres lanoic
A jest doolatnioodereslona
$ \frac{1}{x} x^T A x > 0 \qquad \qquad x^T A x = \sum_{i=1}^n \sum_{j=1}^n A_{ij} x_i x_j $
doolatrio polobresilona V. T. A.
$ \frac{1}{x} x^{T} A_{X \ge 0} $ Ma kaidii $A_{X \ge 0}$
Dla kozdy moriery A ATA dodotnio półokrestona Jesti rank A = n to ATA dodotnio okrestona
Rocklad Choleskyegc
Ax=b A jest symetry cena i dodatnio ckreślona
Mozklad LU toli, że U=LT
$A_{i,j} = \sum_{k=1}^{2} L_{i,k} \cdot L_{k,j} = \sum_{k=1}^{2} L_{i,k} \cdot L_{j,k}$
$L_{i,j} = \frac{A_{i,j} - \sum_{k=1}^{j-1} L_{i,k} L_{j,k}}{L_{j,j}}$ $j < i$
•
$L_{i,i} = \sqrt{A_{i,i} - \sum_{k=1}^{i-1} L_{i,k}^2}$
$L_{i,i} = \sqrt{A_{i,i} - \sum_{k=1}^{i-1} L_{i,k}^2}$ Rockland QR
$L_{i,i} = \sqrt{A_{i,i} - \sum_{k=1}^{i-1} L_{i,k}^2}$
Rocklad QR V11 -, Vn - antonormalny
Rockford QR $V_{11} - V_{11} - V_{11} - V_{11} - V_{11} - V_{12}$ $V_{11} - V_{11} - V_{11} - V_{12} - V_{13} - V_{14}$ $V_{11} - V_{12} - V_{13} - V_{14} - V_{14} - V_{15} - V_{15}$ $V_{11} - V_{12} - V_{13} - V_{14} - V_{15} - V_{15} - V_{15}$ $V_{11} - V_{12} - V_{13} - V_{14} - V_{15} - V_{15} - V_{15} - V_{15}$
Rockland QR V11, V_n - ontonormalny (V_i , V_j > = 0 $i \neq j$ (V_i , V_i > = 1 Tech V_i , V_i = 1 Move ier V_i or V_i and V_i are V_i are V_i or V_i are V_i or V_i or V_i are V_i or V_i
Rozklad QR V11, V_n - ortonormalny (V_i , V_j > = 0 i \(i \) Tesh v ₁ , V_n just long to $X = \sum (X_i, V_i) \cdot V_i$ Moveier ortogonalna Q ^T Q = I Dia koodratoyeh ilongy ortogonalysh just note on the
Rocklad QR V11 , Vn - outonormalny (Vi, Vi) 7 = 0 i \(i \); (Vi, Vi) > = 1 Jedli V1,, Vn jest long to $x = \sum (x_i v_i) \cdot V_i$ Moneters ortogonalna Q ^T Q = I Dla kradintrych ihoryn ortogonalych jest outogonalny. Tachranje norme, długości wektorów i kajty
Rocklad QR V1,, Vn - ontonormalay (Vi, Vj 7 = 0 i # j (Vi, V, > = 1) Tech V1,, Vn jest long to $x = E(x, v_i) V_i$ Moveiers ortogonalna Q. Q = I Dha knodratoych isosyn ortogonalych jest ortogonalny. Nochrowje norme, długoda wektonia i kajty $A = QR$ Q-critogonalna, R-garnotrojitytna
Roshbad QR V11, Vn - ortonormalny (Vi, Vi) 7 = 0 i # j (Vi, Vi) > = 1 Pedi V1,, Vn jest lossy to $x = E(x, v_i) \cdot V_i$ Moseiers ortogonalna Q ^T Q = I Dha kadintrych ibayn ortogonolych jest ortgonolny. Lochrowje norme, długości wektorier i kgty A = QR Q-ortogonalna, R-gornotrojkytna Algorytm Grama Schmidta (11,, an - kolum A
Rocklad QR V11, Vn - ortonormalay (Vi, Vi 7 = 0 it; (Vi, Vi) = 1 dedli V11, Vn jest long to x = Z (x, vi) Vi Moneierz ortogornalna Q. Q = I Dha knodntych ibayn ortogonalych jest ortgonalay. Zochowije norme, olingosci wektoriw i kgty A = QR Q-ontogonalna, R-garnotrojkytna Myorytm Grana Schmidta a1,, an-koluny A Chey table cotonormalne a1,, an
Rocktad QR V11, Vn - outonormalay. (Vi, Vi, Vi) = 0 if; (Vi, Vi) = 1 Teel V1, -, Vn just long to $x = Z(x, v_i) \cdot V_i$ Moniers ortogonolona Q. Q = I Dha knodratyph ilongy ortogonolych just ortogonolog. Lactronyje normy, długości wektorier i kapty A = QR Q-outogonolona, R-garnotrojkytna Myorytm Grama Schmidta a1,, an - koluny A Chear tolie ortonormalne Q1,, an gram {a,} = spram {a,} gram {a,} = spram {a,}
Rocklad QR V11, Vn - ortonormology LV1, V1 7 = 0 if j (V1, V1 > = 1) Acidi V1,, Vn jest long to x = E(x, v1 > V1 Maxierz ortogonalna QT Q = I Dha knodntych ilacyn ortogondych jest ortgonalog. Lachrongic norme, dlugoda wektonier i kasty A = QR Q - ortogonalna, R-gornotnojskytna Myonytm Grana Schnidta a1,, an-kolung A Chay talic cotonormalne a1,, an span {a1,, an} = span {a1} span {a1,, an} = span {a2,, an} span {a1,, an} = span {a2,, an}
Rostlad QR V1, Vn - ortonormalay. (Vi, Vj 7 = 0 if; (Vi, Vj > = 1) Tedic V1, Vn jest long to x = Z(x, v; > Vi Maniars ortogonalma QTQ = I Dia keadintayah ilangu ortogonalyah jest ortogonalay. Lachrongic normy, dhugoo'a wektariar i kgity A = QR Q - ortogonalma, R-garnatniylegtma Magaytin Grana Schmidta a1, an - kalung A Chay tabic ortonormalme a1, an apam {a1,, an} = spam {a2,, an} apam {a1,, an} = spam {a2,, an} a1 = a1 a2 = a2 - (a2, a1) Q.
Rocklad QR V11, Vn - ortenormalay (Vi, Vi, 7 = 0 t) Moverage ortogonalma Q. Q = I Dia keadmetych ways ortogonalych jet ortogonalay. Inarrawje norme, oblagosai weleterier i kgyty A = QR Q - ortogonalma, R-garnatrojlygtma Myorytm Grama Schmidta a1,, an - kalung A Chay table ortonormalme a1,, an gram {a1,, an} = spam {a1,, an} quan {a1,, an} = spam {a1,, an} q= \frac{a1}{ a_1 } Q_z = \frac{a2}{ a_z } = \frac{a1}{ a_z } \ \text{i} \ \text{i}
Rocklad QR Vn, Vn outercornelay (Vi, Vi, V = 0 if; (Vi, Vi, V = 1) Tech Vn, Vn jest locato x = E(x, v; Vi Movierz ortogonalna, QT Q = I Dla Ecadutogch charge ortogonalych jest ortogonaly. Lactronije norme, długoso welsternie i kgty A = QR Q - ortogonalna, R-goventrojkytna Algorytan Grana Schmidta as,, an - kalvay A Chay tobie ortonormalne as,, an gran {as,, an} = gran {as,, an} gran {as,, an} = gran {as,, an} an = as Qz = az - (az, az > a,)
Rocklad QR V11 1 Vn - outonormalay. (Vi, Vi, Vi) >= 1 Ach v1, -, Vn just long to x = Z(x, vi) Vi Moviner outogonalma QT Q = I Dia kiadintyrh ikaya ortogonalyich jut ortogonalay. Lochranje normy, dingona wichteriar i kayty A = QR Q - outogonalma, R - garnetnylegtina Algogith Grama Schaidta a1,, an - kolung A Chay takie outonormalme a1,, an poan {a1,, an} = poan {a2} copan {a1,, an} = poan {a3} copan {a1,, an} = poan {a3} copan {a2,, an} = poan {a3} copan {a3,, an} = poan {a3} copan {a4} copa
Rocklad QR V11 1 Vn - outonormalay. (Vi, Vi, Vi) >= 1 Ach v1, -, Vn just long to x = Z(x, vi) Vi Moviner outogonalma QT Q = I Dia kiadintyrh ikaya ortogonalyich jut ortogonalay. Lochranje normy, dingona wichteriar i kayty A = QR Q - outogonalma, R - garnetnylegtina Algogith Grama Schaidta a1,, an - kolung A Chay takie outonormalme a1,, an poan {a1,, an} = poan {a2} copan {a1,, an} = poan {a3} copan {a1,, an} = poan {a3} copan {a2,, an} = poan {a3} copan {a3,, an} = poan {a3} copan {a4} copa
Rocklad QR V1, Vn - outcommoday. (Vi, Vi, 7 = 0 1 tj (Vi, Vi, > = 1 Tech V1, Vn just loog to x = E(x, vi) Vi Movieur ortogonalma Q! Q = I Da kindwych ileagn ortogonalyd just urtgonolay. Lochawje normy, długosa authoriu i kasty A = QR Q-ortogonalma, R-garnotnythytma Mysystm Groma Schmidta a1, an kolung A Cheay tobie extenormalne a1, an gram {a1,, an} = pram {a2,, an} gram {a1,, an} = pram {a2,, an} Q1 = \frac{a.}{ a_1 } Q1 = \frac{a.}{ a_2 } Q2 = \frac{a.}{ a_2 } Q3 = \frac{a.}{ a_2 } Q4 = \frac{a.}{ a_2 } Q5 = \frac{a.}{ a_2 } Q6 = \frac{a.}{ a_2 } Q7 = \frac{a.}{ a_2 } Q8 = \frac{a.}{ a_2 } Q9 = \frac{a.}{ a_2 } Q1 = \frac{a.}{ a_2 } Q2 = \frac{a.}{ a_2 } Q3 = \frac{a.}{ a_2 } Q4 = \frac{a.}{ a_2 } Q5 = \frac{a.}{ a_2 } Q6 = \frac{a.}{ a_2 } Q7 = \frac{a.}{ a_2 } Q8 = \frac{a.}{ a_2 } Q9 = \frac{a.}{ a_2 } Q1 = \frac{a.}{ a_2 } Q1 = \frac{a.}{ a_2 } Q2 = \frac{a.}{ a_2 } Q3 = \frac{a.}{ a_2 } Q4 = \frac{a.}{ a_2 }
Rosthad QR V1 - 1 V1 - ortonomology (V1, V2 7 - 0 1 t) (V1, V3 7 - 0 1 t) Movies ortogondra QT Q = I Dla Ladritydd i hage ortogondydd jet ortgonodag. Ladringic normy, ddingodo welkerder i kgty A = QR Q - ortogondra, R-genotrafythaa Algoglin Grana Schnidla a 1,, a n - kolung A Chay thic atonomialne Q 1,, a n gran { a 1,, a n } = pran { a 2,, a n gran { a 2,, a n } = pran { a 3,, a n gran { a 3,, a n } = pran { a 4,, a n gran { a 1,, a n } = pran { a 2,, a n gran { a 2,, a 2,, a 2,, a n gran { a 2,, a
Rockhod QR V1, Vn - ortonormolog. (V1, V1, V > -1 And V1, Vn jest long to X - E(X, V1) Vi Moneier ortogonalma Q'Q = I Dia teachtyph inegon ortogonalych jet ortogonalyc. Latronyie normy, slangers werktonier i kysty A = QR Q - ortogonalma, R-garnetnijkytona Algorytin Grama Shmitha a1, an - balung A Chay there extended a1, an gram {a1, -, an = prom {a2, -, an} gram {a1, -, an = prom {a2, -, an} gram {a1, -, an = prom {a2, -, an} II a1 II Q1 = \frac{a1}{11 \frac{a1}{11}} Q2 = \frac{a2}{11 \frac{a1}{11}} Wynecasy a1 ze way sthick posetalych atom po oblicanie. A - QR => R = QTA Ring = (Q11 \frac{a1}{a2}) ATA x = A'B A = QR RTQ QR x = RTQ II-
Rosthad QR V1 - 1 V1 - ortonomology (V1, V2 7 - 0 1 t) (V1, V3 7 - 0 1 t) Movies ortogondra QT Q = I Dla Ladritydd i hage ortogondydd jet ortgonodag. Ladringic normy, ddingodo welkerder i kgty A = QR Q - ortogondra, R-genotrafythaa Algoglin Grana Schnidla a 1,, a n - kolung A Chay thic atonomialne Q 1,, a n gran { a 1,, a n } = pran { a 2,, a n gran { a 2,, a n } = pran { a 3,, a n gran { a 3,, a n } = pran { a 4,, a n gran { a 1,, a n } = pran { a 2,, a n gran { a 2,, a 2,, a 2,, a n gran { a 2,, a
Roothad QR V11-17 VA - orthogonalog (V1, V2) > = 1 Ach V1, V2 > = 0 Ach V1, V2 > = 0 Ach V2 > 1-1 Ach V1, V2 > = 1 Ach V2 > 1-1 Ach V2 > 1-1 Ach V2 > 1-1 Ach V2 > 1-1 Ach Contigendana Q Q = I Da head typh ways orthogonalog ist ortgonalog. Ach Configendana, R-genethylygtina Algogith Grama Schmidta a1, 1-1 an - bedong A Chay the extraorrative a1, 1-1 an Apam {a1} - 1 an = 2 pam {a2} a2 - 02 - (21, 21) 24 If a1 a2 - 02 - (21, 22) 24 If a1 Ach CR => R = QTA Rid = (R1, 21) ATA x = AT RX = RTA RX
Rostlad QR V1, Vn - autocorrecting (Vi, V) 7 = 0 itj (Vi, V) Vi Mexicy victory
Rochard QR Vn-, Vn- outconvenday. (N, V) 7-0 itj (Vn, V) 7-0 itj (Vn, V) 8-1 John Wn-y Vn jest loog to x- Z (x, v; x) V. Mariter ortogonalina QT Q=I Dha keadustyd inogo ortogonalyd jest ortogonalog. Johnouge normy, diagona witherine i kepty A-QR Q-ortogonalina, R-garnotnejkytna Algoythm Grone ishmetha a1,, an- lockung A Chay, this cotonormalae a1,, an goom {a3, -, an} = pann {a2, -, an} quan {a3, -, an} = pann {a3, -, an} quan {a3, -, an} = pann {a3, -, an} Q= -a - (a3, a) 2 a. II a, II Wynescang Q1 ce any otherish poentalyda octora po oblicania. A=QR-> R-QT R Rig = (a1, a2) ATA x = AT R A-QR RIGT QR x = RT QT L RY RX - RT QT L RX - QT L Chinacted desca
Rocklod QR V3-7 VA-autonomology (V1, V2) = 9 John V1-7 VA jest loog to x = Z (x, v; > V1) Moviese artigoroulou Q! Q = I Dha headwight along artigorologic perturbaginally. Inchange normy, olingoic weatherner i kighy A = QR Q - artigoroulou, R-garnotrophytima Algorytha Grana Straitha a1,, a n - kohony A Cheap this cotanormolou a3,, an grana {a3,, an } = xpan {a3,, an grana {a3,, an} = xpan {a3,, an grana {a4,, an grana {a5,, an grana {a5,, an grana {a5,, an grana {a6,, an grana {a7,, an grana {a8,, an grana {a8,, an grana {a9,, an grana {a1,, an grana {a1,, an grana {a2,, an grana {a3,, an grana {a3,, an grana {a4,, an grana {a5,, an grana {a5,, an grana {a5,, an grana {a6,, an grana {a7,, an grana {a8,, an grana {a8,, an grana {a8,, an grana {a8,, an grana {a1,, an grana {a1,, an grana {a2,, an grana {a3,, an grana {
Roothad QR Vn -, Vn - outercommung. (V1, V2) 7 = 0 is (V1, V2) V1 Moneties corresponding to X = X = X = X = X = X = X = X = X = X