

LaTeX TED Talk

Ethan Sie, Sascha Gordon-Zolov

Mr. Mykolyk

Software Development

February 2025

1 The fancy stuff

1.1 Correct matrix equations

$$\begin{pmatrix} 2 & 3 & 4 \\ 2 & 3 & 4 \\ 6 & 7 & 8 \\ 9 & 0 & 10 \\ 2 & 23 & 15 \\ 4 & 6 & 3 \\ 5 & 4 & 5 \\ 6 & 34 & 3 \\ 654 & 7 & 456 \\ 3 & 45 & 754 \\ 3 & 45 & 45 \\ 345 & 345 & 345 \\ 6 & 7 & 8 \\ 9 & 0 & 10 \\ 2 & 23 & 2 \\ 3 & 4 & 6 \\ 7 & 8 & 9 \\ 0 & 10 & 2 \\ 23 & 15 & 4 \\ 6 & 3 & 5 \\ 4 & 5 & 6 \\ 34 & 3 & 654 \\ 7 & 456 & 3 \\ 45 & 754 & 3 \\ 45 & 45 & 345 \\ 345 & 345 & 15 \\ 4 & 6 & 3 \\ 5 & 4 & 5 \\ 6 & 34 & 3 \\ 654 & 7 & 456 \\ 3 & 45 & 754 \\ 3 & 45 & 45 \\ 345 & 345 & 345 \end{pmatrix} \begin{pmatrix} 100 & 30 & 5 & 10 & 10 & 10 & 1 \\ 10 & 40 & 6 & 2 & 40 & 2 & 2 \\ 20 & 6 & 0 & 5 & 3 & 5 & 7 \end{pmatrix} = \begin{pmatrix} 310 & 204 & 28 & 46 & 152 & 46 & 36 \\ 310 & 204 & 28 & 46 & 152 & 46 & 36 \\ 830 & 508 & 72 & 114 & 364 & 114 & 76 \\ 1100 & 330 & 45 & 140 & 120 & 140 & 79 \\ 730 & 1070 & 148 & 141 & 985 & 141 & 153 \\ 520 & 378 & 56 & 67 & 289 & 67 & 37 \\ 640 & 340 & 49 & 83 & 225 & 83 & 48 \\ 1000 & 1558 & 234 & 143 & 1429 & 143 & 95 \\ 74590 & 22636 & 3312 & 8834 & 8188 & 8834 & 3860 \\ 15830 & 6414 & 285 & 3890 & 4092 & 3890 & 5371 \\ 1650 & 2160 & 285 & 345 & 1965 & 345 & 408 \\ 44850 & 26220 & 3795 & 5865 & 18285 & 5865 & 3450 \\ 830 & 508 & 72 & 114 & 364 & 114 & 76 \\ 1100 & 330 & 45 & 140 & 120 & 140 & 79 \\ 470 & 992 & 148 & 76 & 946 & 76 & 62 \\ 460 & 286 & 39 & 68 & 208 & 68 & 53 \\ 960 & 584 & 83 & 131 & 417 & 131 & 86 \\ 140 & 412 & 60 & 30 & 406 & 30 & 34 \\ 2530 & 1314 & 205 & 280 & 842 & 280 & 81 \\ 730 & 330 & 48 & 91 & 195 & 91 & 47 \\ 570 & 356 & 50 & 80 & 258 & 80 & 56 \\ 16510 & 5064 & 188 & 3616 & 2422 & 3616 & 4618 \\ 5320 & 18468 & 2771 & 997 & 18319 & 997 & 940 \\ 12100 & 31528 & 4749 & 1973 & 30619 & 1973 & 1574 \\ 11850 & 5220 & 495 & 2265 & 3285 & 2265 & 2550 \\ 38250 & 24240 & 3795 & 4215 & 17295 & 4215 & 1140 \\ 520 & 378 & 56 & 67 & 289 & 67 & 37 \\ 640 & 340 & 49 & 83 & 225 & 83 & 48 \\ 1000 & 1558 & 234 & 143 & 1429 & 143 & 95 \\ 74590 & 22636 & 3312 & 8834 & 8188 & 8834 & 3860 \\ 15830 & 6414 & 285 & 3890 & 4092 & 3890 & 5371 \\ 1650 & 2160 & 285 & 345 & 1965 & 345 & 408 \\ 44850 & 26220 & 3795 & 5865 & 18285 & 5865 & 3450 \end{pmatrix}$$
$$\begin{pmatrix} 100 & -10 & 20 & -3 & 5 & 7 & 2 \\ 30 & 40 & 6 & 12 & -3 & 6 & 78 \\ 5 & -6 & 0 & 2 & 6 & 5 & 67 \\ -10 & 2 & 5 & 123 & 6 & -657 & 3 \\ 10 & 40 & 3 & 1 & -5 & 43 & 75 \\ 10 & 2 & -5 & 234 & -346 & 7 & 2 \\ 1 & 2 & 7 & 12 & -5 & 4 & 7 \end{pmatrix} \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} 100 & -10 & 20 & -3 & 5 \\ 30 & 40 & 6 & 12 & -3 \\ 5 & -6 & 0 & 2 & 6 \\ -10 & 2 & 5 & 123 & 6 \\ 10 & 40 & 3 & 1 & -5 \\ 10 & 2 & -5 & 234 & -346 \\ 1 & 2 & 7 & 12 & -5 \end{pmatrix}$$
$$\begin{pmatrix} -23 & 45 & 43 & -36 & 54 & -17 & 42 \\ 330 & -740 & 96 & 812 & 35 & -63 & 784 \\ 53 & 26 & 30 & -42 & 56 & 65 & -6 \\ 0 & -22 & 35 & 13 & 56 & 67 & -33 \\ 170 & 0 & 35 & -41 & 55 & -433 & 725 \\ 104 & 32 & -25 & 34 & 46 & 76 & 24 \\ 14 & -23 & 67 & 182 & 59 & 47 & 87 \end{pmatrix} \begin{pmatrix} 100 & -10 & 20 & -3 & 5 & 7 & 2 \\ 30 & 40 & 6 & 12 & -3 & 6 & 78 \\ 5 & -6 & 0 & 2 & 6 & 5 & 67 \\ -10 & 2 & 5 & 123 & 6 & -657 & 3 \\ 10 & 40 & 3 & 1 & -5 & 43 & 75 \\ 10 & 2 & -5 & 234 & -346 & 7 & 2 \\ 1 & 2 & 7 & 12 & -5 & 4 & 7 \end{pmatrix} = \begin{pmatrix} 37 & 3910 & 171 & -7153 \\ 3664 & -29010 & 12128 & 84899 \\ 7854 & 2604 & 807 & 10241 \\ 582 & 1244 & -465 & 16743 \\ 14530 & 792 & 10600 & -98050 \\ 12139 & 2498 & 2368 & 22322 \\ 372 & 1530 & 1603 & 34303 \end{pmatrix}$$

$$\begin{pmatrix} 100 & -10 & 20 & -3 & 5 & 7 & 2 \\ 30 & 40 & 6 & 12 & -3 & 6 & 78 \\ 5 & -6 & 0 & 2 & 6 & 5 & 67 \\ -10 & 2 & 5 & 123 & 6 & -657 & 3 \\ 10 & 40 & 3 & 1 & -5 & 43 & 75 \\ 10 & 2 & -5 & 234 & -346 & 7 & 2 \\ 1 & 2 & 7 & 12 & -5 & 4 & 7 \end{pmatrix} \begin{pmatrix} -23 & 45 & 43 & -36 & 54 & -17 & 42 \\ 330 & -740 & 96 & 812 & 35 & -63 & 784 \\ 53 & 26 & 30 & -42 & 56 & 65 & -6 \\ 0 & -22 & 35 & 13 & 56 & 67 & -33 \\ 170 & 0 & 35 & -41 & 55 & -433 & 725 \\ 104 & 32 & -25 & 34 & 46 & 76 & 24 \\ 14 & -23 & 67 & 182 & 59 & 47 & 87 \end{pmatrix} = \begin{pmatrix} -2934 & 12664 & 3969 & -12202 \\ 14034 & -29960 & 10701 & 45827 \\ 383 & 3240 & 4283 & 7092 \\ -66111 & -25599 & 21053 & -18665 \\ 17801 & -29443 & 8170 & 47324 \\ -57899 & -6130 & -3489 & 19304 \\ 672 & -1550 & 1059 & 3065 \end{pmatrix}$$

1.2 Align math environment

$$\frac{a}{b} = 0 \tag{1}$$

$$x = y + z \tag{2}$$

$$x = 3 + z \tag{3}$$

header 1	header 2	header 3	header 1	header 2	header 3	header 1	header 2	header 3
A Dijiang	M	China	CHN	1992	Barcelona	Basketball	Basketball Men's Basketball	No medal
A Lamusi	M	China	CHN	2012	London	Judo	Judo Men's Extra-Lightweight	No medal
Gunnar Aaby	M	Denmark	DEN	1920	Antwerpen	Football	Football Men's Football	No medal
Edgar Aabye	M	Denmark/Sweden	DEN	1900	Paris	Tug-Of-War	Tug-Of-War Men's Tug-Of-War	Gold
Cornelia (-strannood)	F	Netherlands	NED	1932	Los Angeles	Athletics	Athletics Women's 100 metres	No medal
Cornelia (-strannood)	F	Netherlands	NED	1932	Los Angeles	Athletics	Athletics Women's 4 x 100 metres Relay	No medal
Einar Aalto	M	Finland	FIN	1952	Helsinki	Swimming	Swimming Men's 400 metres Freestyle	No medal
Jyri Aalto	M	Finland	FIN	2000	Sydney	Badminton	Badminton Men's Singles	No medal
Minna Aalto	F	Finland	FIN	1996	Atlanta	Sailing	Sailing Women's Windsurfer	No medal
Minna Aalto	F	Finland	FIN	2000	Sydney	Sailing	Sailing Women's Windsurfer	No medal
Arvo Aaltonen	M	Finland	FIN	1912	Stockholm	Swimming	Swimming Men's 200 metres Breaststroke	No medal
Arvo Aaltonen	M	Finland	FIN	1912	Stockholm	Swimming	Swimming Men's 400 metres Breaststroke	No medal
Arvo Aaltonen	M	Finland	FIN	1920	Antwerpen	Swimming	Swimming Men's 200 metres Breaststroke	Bronze
Arvo Aaltonen	M	Finland	FIN	1920	Antwerpen	Swimming	Swimming Men's 400 metres Breaststroke	Bronze
Arvo Aaltonen	M	Finland	FIN	1924	Paris	Swimming	Swimming Men's 200 metres Breaststroke	No medal
Paavo Aaltonen	M	Finland	FIN	1948	London	Gymnastics	Gymnastics Men's Individual All-Around	Bronze
Paavo Aaltonen	M	Finland	FIN	1948	London	Gymnastics	Gymnastics Men's Team All-Around	Gold
Paavo Aaltonen	M	Finland	FIN	1948	London	Gymnastics	Gymnastics Men's Floor Exercise	No medal
Paavo Aaltonen	M	Finland	FIN	1948	London	Gymnastics	Gymnastics Men's Horse Vault	Gold
Paavo Aaltonen	M	Finland	FIN	1948	London	Gymnastics	Gymnastics Men's Parallel Bars	No medal
Paavo Aaltonen	M	Finland	FIN	1948	London	Gymnastics	Gymnastics Men's Horizontal Bar	No medal

Continued on Next Page

header 1	header 2	header 3	header 1	header 2	header 3	header 1	header 2	header 3
Paavo Aaltonen	M	Finland	FIN	1948	London	Gymnastics	Gymnastics Men's Rings	No medal
Paavo Aaltonen	M	Finland	FIN	1948	London	Gymnastics	Gymnastics Men's Pommel Horse	Gold
Paavo Aaltonen	M	Finland	FIN	1952	Helsinki	Gymnastics	Gymnastics Men's Individual All-Around	No medal
Paavo Aaltonen	M	Finland	FIN	1952	Helsinki	Gymnastics	Gymnastics Men's Team All-Around	Bronze
Paavo Aaltonen	M	Finland	FIN	1952	Helsinki	Gymnastics	Gymnastics Men's Floor Exercise	No medal
Paavo Aaltonen	M	Finland	FIN	1952	Helsinki	Gymnastics	Gymnastics Men's Horse Vault	No medal
Paavo Aaltonen	M	Finland	FIN	1952	Helsinki	Gymnastics	Gymnastics Men's Parallel Bars	No medal
Paavo Aaltonen	M	Finland	FIN	1952	Helsinki	Gymnastics	Gymnastics Men's Horizontal Bar	No medal
Paavo Aaltonen	M	Finland	FIN	1952	Helsinki	Gymnastics	Gymnastics Men's Rings	No medal
Paavo Aaltonen	M	Finland	FIN	1952	Helsinki	Gymnastics	Gymnastics Men's Pommel Horse	No medal
Timo Aaltonen	M	Finland	FIN	2000	Sydney	Athletics	Athletics Men's Shot Put	No medal
Win Aaltonen	M	Finland	FIN	1948	London	Art Competitions	Art Competitions Mixed Sculpturing, Unknown Event	No medal
Ragnhild Aamodt	F	Norway	NOR	2008	Beijing	Handball	Handball Women's Handball	Gold
Andreea Aanei	F	Romania	ROU	2016	Rio de Janeiro	Weightlifting	Weightlifting Women's Super-Heavyweight	No medal
Fritz Aanes	M	Norway	NOR	2000	Sydney	Wrestling	Wrestling Men's Light-Heavyweight, Greco-Roman	No medal
Fritz Aanes	M	Norway	NOR	2004	Athina	Wrestling	Wrestling Men's Light-Heavyweight, Greco-Roman	No medal
Alf Aan-ning	M	Norway	NOR	1920	Antwerpen	Gymnastics	Gymnastics Men's Team All-Around, Free System	Silver
Johan Aantjes	M	Netherlands	NED	1984	Los Angeles	Water Polo	Water Polo Men's Water Polo	No medal
Jan-Erik Aarberg	M	Norway	NOR	1968	Mexico City	Sailing	Sailing Mixed Three Person Keelboat	No medal
Jan-Erik Aarberg	M	Norway	NOR	1972	Munich	Sailing	Sailing Mixed Three Person Keelboat	No medal
Willemien Aardenburg	F	Netherlands	NED	1988	Seoul	Hockey	Hockey Women's Hockey	Bronze
Pepijn Aardewijn	M	Netherlands	NED	1996	Atlanta	Rowing	Rowing Men's Lightweight Double Sculls	Silver
Pepijn Aardewijn	M	Netherlands	NED	2000	Sydney	Rowing	Rowing Men's Lightweight Double Sculls	No medal
Evald (rman-)	M	Estonia	EST	1936	Berlin	Athletics	Athletics Men's Pole Vault	No medal
Olav Aarnes	M	Norway	NOR	1912	Stockholm	Athletics	Athletics Men's High Jump	No medal
Mika Aarnikka	M	Finland	FIN	1992	Barcelona	Sailing	Sailing Men's Two Person Dinghy	No medal
Mika Aarnikka	M	Finland	FIN	1996	Atlanta	Sailing	Sailing Men's Two Person Dinghy	No medal
Jamale (ahrass-)	M	France	FRA	2012	London	Athletics	Athletics Men's 1,500 metres	No medal

Continued on Next Page

header 1	header 2	header 3	header 1	header 2	header 3	header 1	header 2	header 3
Stefan Aartsen	M	Netherlands	NED	1996	Atlanta	Swimming	Swimming Butterfly Men's 100 metres	No medal
Stefan Aartsen	M	Netherlands	NED	1996	Atlanta	Swimming	Swimming Butterfly Men's 200 metres	No medal
Stefan Aartsen	M	Netherlands	NED	1996	Atlanta	Swimming	Swimming Medley Relay 4 x 100 metres	No medal
Stefan Aartsen	M	Netherlands	NED	2000	Sydney	Swimming	Swimming Butterfly Men's 100 metres	No medal
Stefan Aartsen	M	Netherlands	NED	2000	Sydney	Swimming	Swimming Butterfly Men's 200 metres	No medal
Ann Aarnes	F	Norway	NOR	1996	Atlanta	Football	Football Women's Football	Bronze
Karl Aas	M	Norway	NOR	1920	Antwerpen	Gymnastics	Gymnastics Men's Team All-Around, Free System	Silver
Lars Aas	M	Norway	NOR	1912	Stockholm	Fencing	Fencing Men's Foil, Individual	No medal
Lars Aas	M	Norway	NOR	1912	Stockholm	Fencing	Fencing Men's epee, Individual	No medal
Lars Aas	M	Norway	NOR	1912	Stockholm	Fencing	Fencing Men's epee, Team	No medal
Rolf Aas	M	Norway	NOR	1920	Antwerpen	Football	Football Men's Football	No medal
Thomas Aas	M	Taifun	NOR	1912	Stockholm	Sailing	Sailing Mixed 8 metres	Gold
Morten Aasen	M	Norway	NOR	1992	Barcelona	Equestrianism	Equestrianism Mixed Jumping, Individual	No medal
Hakon Aasns	M	Norway	NOR	1936	Berlin	Shooting	Shooting Men's Small-Bore Rifle, Prone, 50 metres	No medal
Hans Aasns	M	Norway	NOR	1936	Berlin	Shooting	Shooting Men's Rapid-Fire Pistol, 25 metres	No medal
Hans Aasns	M	Norway	NOR	1948	London	Shooting	Shooting Men's Rapid-Fire Pistol, 25 metres	No medal
Hans Aasns	M	Norway	NOR	1952	Helsinki	Shooting	Shooting Men's Trap	No medal
Hans Aasns	M	Norway	NOR	1956	Melbourne	Shooting	Shooting Men's Trap	No medal
Hans Aasns	M	Norway	NOR	1960	Roma	Shooting	Shooting Men's Trap	No medal
Erling Aastad	M	Norway	NOR	1920	Antwerpen	Athletics	Athletics Men's 4 x 100 metres Relay	No medal
Erling Aastad	M	Norway	NOR	1920	Antwerpen	Athletics	Athletics Men's Long Jump	No medal
Erling Aastad	M	Norway	NOR	1924	Paris	Athletics	Athletics Men's Long Jump	No medal
Erling Aastad	M	Norway	NOR	1928	Amsterdam	Athletics	Athletics Men's Long Jump	No medal
Abdelhak Aatakni	M	Morocco	MAR	2012	London	Boxing	Boxing Men's Light-Welterweight	No medal
Moonika Aava	F	Estonia	EST	2004	Athina	Athletics	Athletics Women's Javelin Throw	No medal
Moonika Aava	F	Estonia	EST	2008	Beijing	Athletics	Athletics Women's Javelin Throw	No medal
Arvi Aavik	M	Estonia	EST	1992	Barcelona	Wrestling	Wrestling Men's Heavyweight, Freestyle	No medal
Arvi Aavik	M	Estonia	EST	1996	Atlanta	Wrestling	Wrestling Men's Heavyweight, Freestyle	No medal
Nstor Sanjun	M	Spain	ESP	2016	Rio de Janeiro	Gymnastics	Gymnastics Men's Individual All-Around	No medal
Nstor Sanjun	M	Spain	ESP	2016	Rio de Janeiro	Gymnastics	Gymnastics Men's Floor Exercise	No medal
Nstor Sanjun	M	Spain	ESP	2016	Rio de Janeiro	Gymnastics	Gymnastics Men's Parallel Bars	No medal

Continued on Next Page

header 1	header 2	header 3	header 1	header 2	header 3	header 1	header 2	header 3
Nstor Sanjun	M	Spain	ESP	2016	Rio de Janeiro	Gymnastics	Gymnastics Men's Horizontal Bar	No medal
Nstor Sanjun	M	Spain	ESP	2016	Rio de Janeiro	Gymnastics	Gymnastics Men's Rings	No medal
Nstor Sanjun	M	Spain	ESP	2016	Rio de Janeiro	Gymnastics	Gymnastics Men's Pommel Horse	No medal
Patrick Abada	M	France	FRA	1976	Montreal	Athletics	Athletics Men's Pole Vault	No medal
Talaat Abada	M	Egypt	EGY	2000	Sydney	Taekwondo	Taekwondo Men's Flyweight	No medal
Mohamed Abadi	M	Iran	IRI	1948	London	Boxing	Boxing Men's Heavyweight	No medal
Antonio Beci	M	Spain	ESP	2016	Rio de Janeiro	Athletics	Athletics Men's 5,000 metres	No medal
Ren Abadie	M	France	FRA	1956	Melbourne	Cycling	Cycling Men's Road Race, Individual	No medal
Ren Abadie	M	France	FRA	1956	Melbourne	Cycling	Cycling Men's Road Race, Team	Gold
Borislav Abadzhiev	M	Bulgaria	BUL	1988	Seoul	Boxing	Boxing Men's Light-Welterweight	No medal
Georgi Abadzhiev	M	Bulgaria	BUL	1924	Paris	Cycling	Cycling Men's Road Race, Individual	No medal
Georgi Abadzhiev	M	Bulgaria	BUL	1924	Paris	Cycling	Cycling Men's Road Race, Team	No medal
Ivan Abadzhiev	M	Bulgaria	BUL	1956	Melbourne	Weightlifting	Weightlifting Men's Lightweight	No medal
Ivan Abadzhiev	M	Bulgaria	BUL	1960	Roma	Weightlifting	Weightlifting Men's Middleweight	No medal
Mikhail Abadzhiev	M	Bulgaria	BUL	1960	Roma	Weightlifting	Weightlifting Men's Middleweight	No medal
Stefan Abadzhiev	M	Bulgaria	BUL	1960	Roma	Football	Football Men's Football	No medal
Giovanni Abagnale	M	Italy	ITA	2016	Rio de Janeiro	Rowing	Rowing Men's Coxless Pairs	Bronze
Jos Gmez	M	Spain	ESP	2008	Beijing	Fencing	Fencing Men's epee, Individual	Bronze
M'Bairo Abakar	M	Chad	CHA	1992	Barcelona	Judo	Judo Men's Half-Middleweight	No medal
Patimat Abakarova	F	Azerbaijan	AZE	2016	Rio de Janeiro	Taekwondo	Taekwondo Women's Flyweight	Bronze

Not Continued on Next Page