

Table 1: Table of Notation conventions

type	description	common example
optimization variable (scalar)	lower-case letter	x, y
optimization variable (vector)	lower-case letter with <code>\vec</code>	\vec{x}, \vec{y}
optimization variable (matrix)	upper-case letter with <code>\vec</code>	\vec{A}, \vec{B}
element	subscript	\vec{x}_i, \vec{A}_{ij}
column vector	comma separated parentheses tuple	$(1, 2, 3)$
row vector	space separated square bracket list	$(1, 2, 3) = [1 \ 2 \ 3]^\top$
random variable	upper-case letter	X, Y
random variable vector	upper-case letter with <code>\vec</code>	\vec{X}, \vec{Y}
common set	upper-case letter with <code>\mathbb</code>	\mathbb{R}, \mathbb{Z}
set	upper-case letter with <code>\mathcal</code>	\mathcal{S}, \mathcal{T}
function	lower-case letter	$f, g : \mathbb{R}^n \rightarrow \mathbb{R}^m$
online algorithm	<i>mathrsfs</i> : <code>\mathscr</code>	\mathcal{A}
regret	<code>\mathfrak</code>	\mathfrak{R}
competitive ratio		π
dual variables		λ, μ
dual function		$D(\lambda)$
Lagrangian function		\mathcal{L}
step size		α, β