Symbols

ℓ_p **($p > 0$)** : A norm on a multidimensional real-value space defined in Appendix A.1 by Equation (A.1) and denoted by $\| \cdot \|_p$. See 11, 18, 200, 203, 204, 208, 210–214, 216–218, 220, 221, 223, 225–234, 244, 245, 260, 261, 264, 265

$m_{\mathbb{C}}(\cdot)$: A function that defines a distance metric for a convex set $\mathbb{C}$ relative to some central element $\mathbf{x}^{(c)}$ in the interior of $\mathbb{C}$ (see also: Minkowski metric). See 210, 211

$N^{(h)}$: The total number of ham messages in the training dataset. See 107, 108, 111, 277–280

$n_j^{(h)}$: The number of occurences of the j^{th} token in training ham messages. See 107, 108, 111, 277–280

$N^{(s)}$: The total number of spam messages in the training dataset. See 107, 108, 111, 119, 277–280

$n_j^{(s)}$: The number of occurrences of the j^{th} token in training spam messages. See 107, 108, 111, 119, 277–280

$\mathbf{Q}$: The matrix of network flow data. See 137, 138, 152

$\mathbf{R}$: The routing matrix that describes the links used to route each OD flow. See 138, 142, 152

$\Re$: The set of all real numbers. See 23–25, 27, 142, 256–259

$\Re_{0+}$: The set of all real numbers greater than or equal to zero. See 26, 203, 211, 256, 276

$\Re_{+}$: The set of all real numbers greater than zero. See 27, 216, 256, 257

$\Re^D$: The D-dimensional real-valued space. See 24, 139, 142, 143, 147, 202, 216, 226, 257, 259

$\mathbf{x}$: A data point from the input space $\mathcal{X}$ (see also data point). See 22–24, 138, 139, 141, 145, 147, 148, 200, 203–206, 208–211, 213, 223, 224, 226, 255

$\mathbf{x}^A$: A (malicious) data point that the adversary would like to sneak past the detector. See 70, 203–206, 209–215, 217, 218, 221–223, 225, 226, 231, 233–235, 261, 264, 265

$\mathcal{X}$: The input space of the data (see also: input space). See 22–25, 49, 202, 203, 206, 208, 210, 211, 224, 233, 235, 236, 259, 260

D : The dimensionality of the input space $\mathcal{X}$. See 22, 23, 202–205, 212–218, 220, 223–232, 235, 237, 259

$\mathcal{X}_f^-$: The negative class for the deterministic classifier f (see also: negative class). See 203–206, 208, 210–213, 219, 221–224, 226, 231, 233, 235, 236

$\mathcal{X}_f^+$: The positive class for the deterministic classifier f (see also: positive class). See 203, 205, 210–214, 216, 218, 233, 234

y : A label from the response space $\mathcal{Y}$ (see also: label). See 23, 26, 27, 107

$\mathcal{Y}$: The response space of the data (see also response space). See 23–27, 59, 203

$\mathfrak{Z}$: The set of all integers. See 23, 256, 258