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In[73]:= (*Twin Prime Harmonic Analysis (BBP-Modulated)*)bbpDelta[n_Integer, kmax_ : 4] :=
  Floor[Total[16^(1 - #) / (8 # + Mod[n, 7] + 1) & /@ Range[kmax]]] + 1

twinPrimesBBP[limit_Integer, kmax_ : 4] := Module[{pairs = {}, n = 3},
  Reap[While[n < limit, If[PrimeQ[n] && PrimeQ[n + 2], Sow[{n, n + 2}]]];
  n += bbpDelta[n, kmax];]] [[2, 1]]

twin = twinPrimesBBP[10^6];

ListPlot[Differences[#[[All, 1]]] &@twin,
  PlotLabel -> "Twin Prime Gaps", Joined -> True, Filling -> Axis]

ListLinePlot[MovingAverage[Differences[#[[All, 1]]] &@twin, 50],
  PlotLabel -> "Entropy Trace (Moving Avg. of Gaps)"]

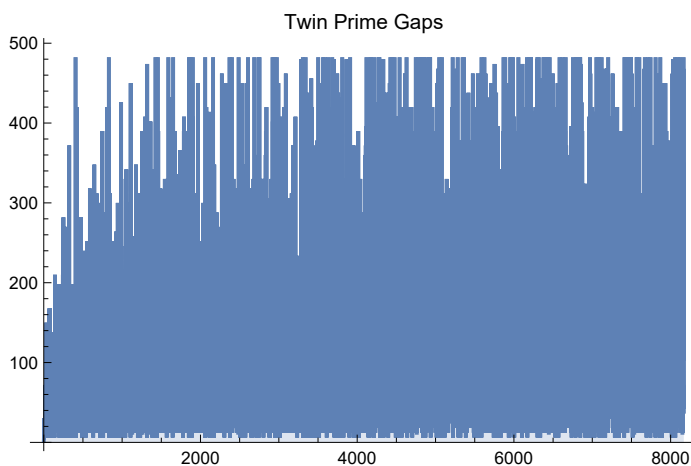
FourierListPlot[Differences[#[[All, 1]]] &@twin, PlotLabel -> "Fourier Spectrum of Gaps"]

Histogram[Mod[#[[All, 1]], 1000] &@twin, 50, PlotLabel -> "Modulo 1000 Distribution"]

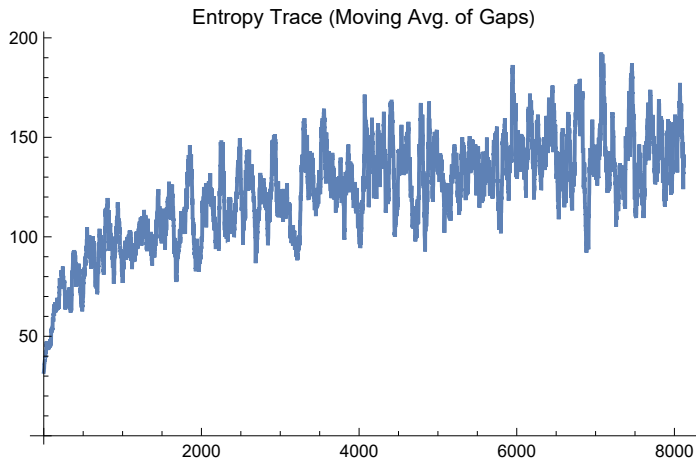
ListPointPlot3D[Table[{i, twin[[i, 1]], twin[[i + 1, 1]] - twin[[i, 1]]}, {i, 1, Length[twin] - 1}],
  AxesLabel -> {"Index", "Prime", "Gap"}, Boxed -> True, PlotStyle -> Blue]

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Out[76]=



Out[77]=



Out[78]=

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138, 24, 36, 24, 18, 120, 12, 6, 84, 108, 18, 12, 210, 42, 66, 72, 30, 60, 90, 102, 18,
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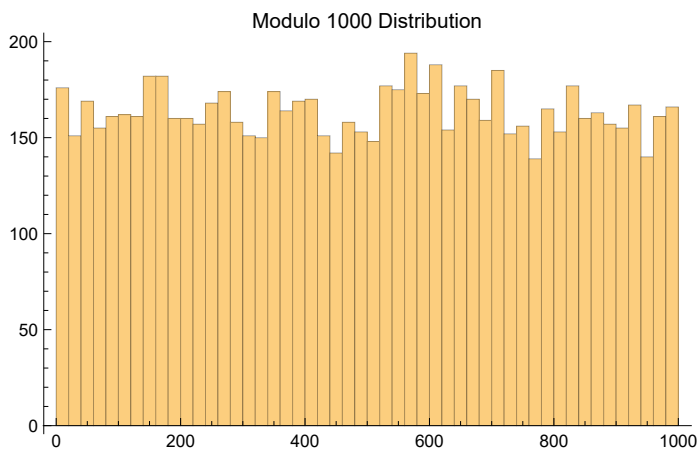
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66, 42, 468, 114, 36, 642, 102, 180, 348}, PlotLabel -> Fourier Spectrum of Gaps]

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Out[79]=



Out[80]=

