

Highlights

- We investigate how temperature & voltage affect power efficiency of an NVIDIA K20 GPU.
- We show GPU power consumption grows non-linearly with both temperature and voltage.
- This non-linear power consumption is as predicted by physical transistor models.
- GPU power efficiency is increased by tuning voltage, frequency, and temperature.
- We find that such tuning can increase power efficiency by 48% for an NVIDIA K20 GPU.