Gaurav Narang

(+1)509-595-9978 | gaurav.narang@wsu.edu | https://narangg.github.io | gaurav-narang-272b3546 | Pullman, USA

Education

Washington State University *CGPA 3.9/4*

PhD in Computer Engineering, Advised by Dr. Partha Pande and Dr. Jana Doppa — Aug. 2021 - Ongoing

IIIT Delhi *CGPA 8.88/10*

M.Tech in VLSI and Embedded Systems, Advised by Dr. Alexander Fell — 2013- 2015

Technical Skills

Programming	Python, C, shell, Verilog
Professional Softwares	Design Compiler, Primetime, VCS
Academic Softwares	gem5, booksim, Neurosim, hotspot

Publications

[1] **Gaurav Narang**, Aryan Deshwal, Michael Kishinevsky, Raid Ayoub, Jana Doppa, Partha Pande. DYNAMIC POWER MANAGEMENT IN LARGE MANYCORE SYSTEMS: A LEARNING-TO-SEARCH FRAMEWORK *TODAES*, 2023

[2] **Gaurav Narang**, Michael Kishinevsky, Raid Ayoub, Jana Doppa, Partha Pande. Uncertainty-aware Online Learning for Dynamic Power Management in Large Manycore systems *ISLPED 2023*

Research Projects

Bayesian Optimization (BO)-enabled Dynamic Power Management (DPM)

2021 - 2023

- Used Bayesian Optimization to search optimal DPM policy for large manycore systems
- Compared against Imitation Learning (IL) and Reinforcement learning (RL) methodologies
- Reduced up to 30% energy and 17 C temperature compared to RL method on monolithic3D noc-enabled 64 core system

Uncertainty-aware Online learning

2023

- Used entropy based mechanism to measure Policy's confidence in unseen (online) application
- Used Conformal Prediction to generate adaptive prediction sets as a function of features of unseen application
- Pushed boundaries of existing online learning methodologies such as RL and online-IL
- Reduced Energy-delay-product by 60% (50%) compared to RL (IL)

Professional Experience

Synopsys

Role: Design Engineer 2 — April.2018 - July.2021

- Individual contributor to several Serdes PHY testchips frontend design (RTL to timing)

STMicroelectronics

Role: Sr. Design Engineer — Aug.2015 - March.2018

- Worked on design of memory repair and ECC for SRAMs

Awards and Honors

2021-2023	**Scholarship**: Alfred Suksdorf Fellowship
2022	**Fellowship**: Richard Newton Young Fellow in DAC Conference 2022

References

- Prof. Partha Pratim Pande
  Ph. D, Professor, at School of EECS, Washington State University, Pullman, USA
  pande@wsu.edu
- Prof. Jana doppa
  Ph. D, Professor, at School of EECS, Washington State University, Pullman, USA
  jana.doppa@wsu.edu