

The **LUCENT** [Lab for **U**nconventional **C**omputing using **E**merging **N**anotechnologies] lab at the **University of Texas at San Antonio** has multiple PhD positions starting Fall 2023.

There are three broader research directions [each comprises multiple major projects]:

**1) Futuristic AI Accelerator Design**

- a. AI Accelerator Design using Emerging Technologies
- b. Exascale Photonic Computer for Large Language Models
- c. Embedded Systems design for AI
- d. High-speed Photonic Memory Design

**2) Building Computer-Aided-Design Toolbox for Emerging Technologies**

- a. Fault and Reliability Modeling of Emerging Computing Technologies
- b. Making libraries for Photonic Components, Memristor Cells, and other Emerging Computing paradigms.
- c. Design of CAD framework for Future AI Accelerator Design.
- d. Building dataset that encompasses real-world applications such as self-driving cars, healthcare diagnostics, patient reporting outcomes, and agriculture harvesting.

**3) Embedded AI for Healthcare**

- a. Design of IoT for Real-time Patient Reporting Outcomes (PRO) Analytics
- b. Real-time AI Cytometry for Disease Diagnosis
- c. Embedded Vision AI for Real-time Organoid Investigation
- d. AI-Diagnosis On a Chip

**Degree Requirements:** A Bachelor's or Master's degree in Electrical Engineering, Electronics Engineering, Computer Science/Engineering, Physics, and Biotechnology/Bioengineering with a strong aptitude for research.

**Required Skills:**

- 1) Strong background in programming (at least one language such as C++, Python, Java, C, etc.)
- 2) Familiarity with AI/ML and Computer Architecture
- 3) Familiarity with Cadence and Synopsis CAD tools
- 4) Familiarity with Photonics is a bonus
- 5) Experience in paper writing is a bonus

**Test Score:** GRE (Optional/Bonus), TOEFL/IELTS (Must)

**Contact:** If you are interested, please email your detailed CV and transcripts to the lab director [Dr. Dharanidhar Dang](mailto:dhdang@health.ucsd.edu). Email ID: dhdang at health dot ucsd dot edu. Your Email Subject header must be "PhD at LUCENT for Future of Computing || Your-Last-Name Your Last University Country of last University".

**Please note that you also need to apply officially for the [UTSA ECE Graduate program](#) by June 1<sup>st</sup>, 2023.**

**Opportunity:** This is a unique opportunity to work under the expert guidance of Prof. Dang. In addition, you will get a chance to work in a transdisciplinary set up that includes collaborators from the AI Matrix-Consortium at UTSA, UT Health, UC San Diego, Texas A&M University, Oak Ridge National Lab, and Lawrence Berkeley Lab.

Join LUCENT to light up the future of Computing!!

[AzarApply.ir](http://AzarApply.ir)

Thanks for considering LUCENT!

Best regards,  
Prof. Dharanidhar Dang  
Director, The LUCENT Lab @UTSA