Tanya Dhaka

Email: tanyadhaka@hotmail.com
LinkedIn: https://www.linkedin.com/in/tanya-dhaka/
GitHub: https://tanyadhaka.github.io

Education

The Pennsylvania State University *Aug 2018 – May 2020*
Master of Science in Electrical Engineering
Research Paper: *Neuromorphic Computing: Hardware Systems Survey*

Visvesvaraya Technological University (VTU), India *Aug 2012 – July 2016*
Bachelor of Engineering in Electronics & Communication Engineering
Capstone: *Automatic Multimodal Biometric Secure System for Public Distribution*

Research Interests

Climate change; remote sensing; Earth observation AI; ecohydrology; drought impacts; vegetation resilience; climateecosystem interactions; wildlife ecology; environmental data science; predictive ecosystem modeling.

Research Experience

Independent Research, Penn State *Spring 2020*

- Conducted a survey of neuromorphic systems (Loihi, TrueNorth), evaluating event-driven, low-power architectures.
- Synthesized cross-disciplinary work across ML, neuroscience, and VLSI for hardware-accelerated cognitive computation.
- Identified research challenges in device-level and algorithmhardware co-design.
- Delivered a formal research presentation summarizing findings.

Research Intern, Department of Space, India *Spring 2018*

- Assisted with digital IC design flows as part of the Design and Process Group

Industry Experience

Physical Design Engineer, Intel Corporation *2020 – 2025*

- Owned RTL-to-GDSII implementation for advanced-node network-on-chip blocks (7nm, 1.8nm).
- Built automation using TCL and Python for flow optimization and debugging.
- Collaborated with cross-functional teams across STA, DFT, RTL, and CAD.
- Mentored junior engineers in block-level physical design methodology.

Physical Design Intern, Intel Corporation *Summer&Fall 2019*

- Supported RTL to GDSII flows for 14nm SoC blocks.

Technology consultant, Hewlett Packard Enterprise *2016 – 2017*

Selected Projects

- **Vegetation Drought Recovery Modeling** NDVI, VOD, soil moisture comparison (India vs California). *2025*
- **ML Prediction of Vegetation Stress** VPD, rainfall, landcover models. *2025*
- **NDVIVOD Divergence as Early Warning Signal for Ecosystem Decline**. *2025*
- **Wildlife Habitat Compression Under Drought**. *2025*
- **Soil Moisture Memory Modeling**. *2025*

Skills

Programming: Python, MATLAB, R, SQL, JavaScript
Geospatial Tools: Google Earth Engine, QGIS, ArcGIS Pro
Environmental Data Science: Data Acquisition and Management, Environmental Domain Knowledge, Machine Learning and AI
Chip Design Tools: Synopsys Fusion Compiler, PrimeTime, ICC2

Selected Coursework

Earth/Climate: Environmental Science, Climate Change, Biology, Marine Biology, Animal Behavior and Welfare
Quantitaive: Linear Algebra, Probability, Applied Math, Optimization
EE/CS: Neuromorphic Computing, Machine Learning, Signals, Control Systems

Publications & Manuscripts

- Dhaka, T. *Energy and Carbon Footprint of Modern VLSI Physical Design and EDA Flows: A Survey.* Manuscript in preparation, 2025.

Academic Presentations

- Dhaka, T. A Reconfigurable Smart Sensor Interface for Industrial WSN in IoT Environments. VTU, 2016.
- Dhaka, T. A System to Detect Humans Buried Under Earthquake Rubble. VTU, 2015.

Professional Memberships

- Institute of Electrical and Electronics Engineers (IEEE), Member
- Society of Women Engineers (SWE), Member

Achievements & Awards

- Intel Recognition Awards for technical contributions and timely delivery. *2020 – 2025*
- Second Place, All India Sports Extravaganza (Lawn Tennis). *Feb 2016*

Personal Interests

Certified Yoga Instructor (RYT-200); Hiking and nature exploration; Environmental volunteering

References

Available upon request.