Karthikeyan R

To be Electronics Engineer,
With Computer science in mind

November 2,2001

College Of Engineering Guindy, Anna University

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Indian Citizenship

Social Network

Github Project Page Link

LinkedIn Page Link

Skills

- Linux
- C/C++
- Tensorflow
- Matlab
- OpenGL
- CUDA
- Computer Vision
- Python
- IC design
- OpenLane
- Verilog
- LTSpice
- Neuron Modelling
- HFSS
- ROS & Gazebo
- Deep RL
- HTML
- CSS

Languages

- English ● ● ● ● ●
- Hindi ● ● ● ● ●
- Tamil ● ● ● ● ●

Education

2019 - present **Bachelor of Engineering in Electronics and Communication** — CEG,Anna University
Current CGPA – 9.54 out of 10

2019 **Class XII** — National Victor Public School
Aggregate –95.2%

2017 **Class X** — National Victor Public School
CGPA – 10 out of 10

2021 **Undergraduate Researcher** — Integrated Systems Laboratory
Working on GPS Baseband Engine(Digital) IC design and Temperature Sensor(Analog) IC design

2022 **Undergraduate Researcher at University of Toronto** — Integrated Systems Laboratory
Summer research under Prof. Roman Genov at the University of Toronto developed a RISCV chip for mask generation for coded-exposure image sensors. Generated verilator model for the pulpissimo

Work Experience

May 2022 - August 2022 **Undergraduate Researcher at University of Toronto** — Integrated Systems Laboratory
Summer research under Prof. Roman Genov at the University of Toronto developed a RISCV chip for mask generation for coded-exposure image sensors. Completed a Continuous Integration flow for the project. Completed an Automatic Documentation engine for the project.

June 2021 - July 2021 **Undergraduate Researcher at The Indian Academy of Sciences(IAS)** — Integrated Systems Laboratory
Project under Summer Research fellowship: Image based rendering based Reinforcement learning environment for end-to-end training to avoid sim2real, domain adaptation or domain randomization etc using CUDA and OpenGL

May 2021 - January 2022 **Undergraduate Researcher at Anna University** — Integrated Systems Laboratory
Worked on GPS Baseband Engine(Digital) IC design and Temperature Sensor(Analog) IC design

Projects

August 2021 - present **Prometheus**
A Neuromorphic IC with LIF neurons fabricated in efabless MPW-3 shuttle using OpenLane and Skywater 130nm PDK

August 2021 - December 2021 **Hardware-Software Codesign for Verilog development over PCIe**
Developed a PCIe-Verilog verification setup for codesign using QEMU and SystemC-TLM

June 2020 - October 2020 **Machine Learning Assisted Verification Methodology for Analog and Mixed Signal Circuits**
Semiconductor Research Corporation(SRC)- Task 2982.001 The goal of the proposed work for AMS (Analog and Mixed Signal circuits) verification was to characterize the input space, the output space and the mapping between the two using ML techniques, in such a manner that the quality and efficiency of design verification is improved.

June 2020 - October 2020 **Tyche**
Adaptive traffic control using Deep Reinforcement Learning: Deep Q-Network and Cityflow openAI gym environment

May 2021 - December 2021 **RTDrone**
An autonomous delivery drone for delivering packages to hostels from varsity gate made in collaboration with Robotics club of CEG using ROS, Gazebo, AirSim, Pixhawk, YOLOV3, Nvidia Jetson Nano

May 2020 - June 2020 **MERO**
An extensive C++ image manipulation library with SIMD and GPU support for acceleration

August 2021 - December 2021 **Koch Fractal Based Wearable Antenna Backed with EBG Plane**
A low-profile antenna for wearable applications in WiMax standards. Optimized for flexibility, efficiency and SAR values.

Achievements

2022 **BIRAC Startup Grant**- Funding for 'Ultrafast, Accurate Nanopore DNA sequencing using custom ASIC' Startup

2022 **Summer Undergraduate Researcher**- University of Toronto

2020-2021 **Summer Research Fellow**- The Prestigious Indian Academy of Sciences(IAS)

2021 **First Position**- Techstars Startup Weekend Chennai

2021 **First Position**- MATRIMAZE: An Advanced Matlab Competition, Vision 2021

2021 **First Position**- Web development Hackathon, Abacus CEG 2021

2018 - 2019 **Third Prize**- Silicon Battles Delhi, Senior Quiz

Positions

April 2021 - present **Student director**- Computer Society of Anna university- Web and app

December 2020 - present **Director**- Robotics Club of CEG

Workshops Attended

2017 **IOT Workshop**
An in-depth look at IOT with a special focus on Artificial Intelligence and Cybersecurity

2020 **Operating Systems Workshop, Kurukshetra 2020**
A Deep look at Unix/Linux internals and File Systems

2020 **Basic Robotics Workshop**
A Basic Robotics workshop with hands-on experience

Extra-Curricular Activities

Sports Badminton, Handball

Music Flute