Pravindu Goonetilleke

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Profile

Curious and innovative Electronics and Telecommunications engineering student and the University of Moratuwa, with a passion for FPGA based systems, embedded systems, and analog circuit design. I enjoy working close to metal, and am currently exploring FPGA based AI acceleration. With a solid foundation in digital and analog design, and a rich background in music and theatre, I bring a disciplined, creative and innovative mindset to technical challenges.

Education

University of Moratuwa, Undergraduate Bsc. (Hons) Engineering · · · · · · · · · · · · · · · · April 2023 – Present
- Semester 1; GPA 4.0/4.0 (Dean's List) - 14 credits
- Semester 2; GPA 4.0/4.0 (Dean's List) - 23 credits
- Semester 3; GPA 3.96/4.0 (Dean's List) - 21 credits

Royal College Colombo 07 · March 2008 – February 2022
- G.C.E. A/Ls - 3As in Physical Science Stream - 2.7033 Z Score
- G.C.E. O/Ls - 9As

Other Academic Test Scores

Scholastic Aptitude Test (SAT) | The College Board
- CB Student ID: 130099771
- Total Score: 1590 (out of 1600)
- Percentile: 99th

Test of English as a Foreign Language (TOEFL) | ETS
- Test Date: October 30, 2022
- Total Score: 117 (out of 120)

Major Achievements

- Accepted into **Duke University**, class of 2027, with a 50% scholarship (unable to pursue due to financial concerns.)
- **Country ranking 27th**, Physical Science Stream, Advanced Level Examination 2021/2022
- **Diploma** Performing Speech and Drama - **Trinity College London**
- Member of the **Colombo Wind Orchestra** and **Symphony Orchestra of Sri Lanka**.

Experience

Intern, Vidullanka PLC · October 2023 - December 2023
- Executed PVsyst Simulations for rooftop and ground mounted projects.
- Designed PV Module layouts using Helioscope for rooftop solar project.
- Developed a Return-On-Investment calculator tailored for customers venturing into the solar energy market.
- Researched on floating solar technology and assisted in preparation of documents for an Expression of Interest (EOI) document for the Samanalawewa 200MW Floating Solar Project.
- Conducted extensive research on the technical and financial pre-feasibility of investing in renewable energy across diverse countries, namely Ghana, Madagascar, Gambia, and Mozambique.
- Delivered a comprehensive presentation at the management meeting on the PUCSL hearing, specifically

addressing the proposed tariff revision.

Projects

Hardware Accelerator for LLM Inference ↗   Ongoing
- Self-initiated FPGA project for an international engineering competition, motivated by personal interest in edge AI and digital hardware acceleration (not university-mandated).
- Designing a hardware accelerator to enable inference and fine-tuning of lightweight LLMs (e.g., TinyLlama) on embedded devices, using QLoRA for quantization.
- Focused on developing a custom quantization IP core and pipelining it for efficient throughput on FPGA hardware.
- Tools Used: High Level Synthesis (HLS), VHDL, SystemVerilog, Vivado, Python, PyTorch,

UART Module ↗   2025
- Designed and implemented a UART communication system as a personal project, with separate receiver and transmitter modules, each equipped with dedicated input and output FIFOs for efficient data handling, and state machines to ensure reliable communication.
- Incorporated control and status registers to provide intuitive interaction and detailed communication feedback.
- This was done with the intention of later using it in a logic analyzer that I am working on.
- Tools Used: VHDL, Vivado

Analog Function Generator ↗   2024
- Designed the circuit for an analog function generator, capable of producing square, triangle, sine, pwm, and sawtooth waveforms from 20-20kHz, in partial fulfillment of the requirements for the module EN 2091 Laboratory Practice and Projects
- Tools Used: LTspice, Multisim, Altium Designer

Audio Feedback Based Parking Assistant ↗   2024
- Developed an audio feedback based parking assistant in partial fulfillment of the requirements for the module EN 1190 Engineering Design Project
- Tools Used: Arduino

Skills and Interests

Programming Languages and HDL: VHDL, Python, C/C++, Java

EDA: Vivado, Intel Quartus, LTspice, Matlab

Interests: FPGA and Digital Design, Analog Circuit Design, Embedded Systems

Other Activities and Qualifications

- Senior Prefect - Royal College (2022 and 2023)
- Senior Coordinator – Royal College Western Orchestra (2019 and 2020)
- Level 4 Diploma in Performing - Associate of Trinity College London, Speech and Drama (2019)
- 4th Asia Pacific Choir Games organized by Interkultur- Choir Obtained 2 Gold Medals (2017)
- Junior Prefect (2016)
- Bronze Medal in the Sri Lankan Junior Astronomy Olympiad Competition (2016)
- Troop Leader and Patrol Leader 6th Scout Troop (2014, 2015, and 2016)
- First Place, National Level – Orchestra Open A1 Category at the All Island Inter-School Western Music and Dance Competition (2015, 2016, 2017, 2018 and 2019)
- Saxophonist - Royal College Western Orchestra (2015, 2016, 2017, 2018, 2019 and 2020), Colombo Wind Orchestra (2016 to present), National Youth Orchestra (2016, 2017, 2018, 2019), Symphony Orchestra of Sri Lanka (2019) and performed alongside the Worldship Orchestra (2016)
- Bowl Champions – Juvenile Category at the Royal College Basketball Carnival (2013)