Johan Jino

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EDUCATION

MEng Electronic and Information Engineering 09/2021 – 06/2025
Imperial College London London, United Kingdom
- On track for First Class and achieved 73.68% overall in Year 2.
- Modules of interest: Mathematics(82%), Instruction Set Architecture and Compilers (79%), Software Systems (76%), Discrete Mathematics (74%)
- Developed ExecEngine (ANSI C compiler) for RISC-V architecture, rated second best compiler in the cohort of 150 students.

All India Senior School Certificate 2018 – 2021
GEMS United Indian School Abu Dhabi, United Arab Emirates
- Graduated with an average of 95.4% score overall.
- School topper for Physics (96), Mathematics (96), Chemistry (96) and Computer Science (95).

PROFESSIONAL EXPERIENCE

Software Engineer Intern
Qualcomm
07/2023 – 09/2023 | London, United Kingdom
- Primarily focused on profiling and timing analysis tool for on device testing. Scaled tool from TCL to Python and added more statistical features.
- Further worked with firmware on RISC-V based hardware root of trust for Snapdragon SoC.
- Worked with: Python, C++, LLVM, Perforce, etc.

ML Research Engineer
Ivy
07/2022 – 10/2022 | London, United Kingdom
- Worked in a team towards development of a new python library unifying ML frameworks and automated code conversions
- Created unit tests for frontend and functional API using Pytest and Hypothesis allowing property-based testing.
- Implemented functions in each backends to allow transpilation and run functions framework-agnostically.
- Reviewed pull-requests and issues from other interns and from the community
- Latest stable release and documentation: unifyai/ivy

SKILLS AND AWARDS

Programming Languages
- Python, C++ - *Advanced*
- Bash, SystemVerilog - *Intermediate*

Frameworks and Libraries
- TensorFlow, NumPy, Matplotlib - Intermediate
- PyTorch, Pytest, Hypothesis - Beginner

Database Management
- MySQL, MongoDB - *Intermediate*
- PostgreSQL - *Beginner*

Software Development
- Git, Perforce, GitHub-automations
- Docker, Linux

Technologies
- Azure, GCP, AWS, Postman
- Networks, Profiling

Awards And Scores
- National Academic Excellence Award - Abu Dhabi
- Prefect of the Year Award – GEMS United Indian School
- Gold Medalist for Year 12, 11 and 10 for best performance among the all students in the cohort.
- Joint Entrance Examination India (JEE) – 88.719 percentile. Qualified for Advanced (2021)

PROJECTS

ExecEngine 02/2023 – 04/2023
ANSI C Compiler
- Developed C (C90) to RISC-V assembly compiler in a pair, with full support for integer and floats, pointers, arrays, char and structs.
- Added support for most keywords including while, switch, break, continue, enum, built-in functions like sizeof as well as multiple nested and recursive functions.
- Created Bash Scripts for test automation and Yaml for GitHub automation config.
- Scored a 80% out of all the seen and unseen test cases, putting **our compiler 2nd among all 150 students**.

FlappyGA 02/2023 – 04/2023

FPGA Controlled Game

- Real-time multiplayer game where players utilise an FPGA to control a character on the screen. Uses accelerometer embedded on DE10-Lite FPGA for remote control.
- Game built on C# - Unity and AWS, with score display on FPGA hex display.
- Further added Python-TensorFlow ML Bot to play the game independently. Trained based on previous user gameplays.
- Bot Neural Network trained on factors identified crucial for jump timing, such as height and distance of obstacle, time since last jump, etc.
- Worked with: C#, Python, C, TensorFlow, SystemVerilog, AWS DynaboDB, Unity.

MazeMaster 04/2023 – 06/2023

Self-Balancing Maze Solving Rover

As a group built an autonomous bot balanced on two
wheels that traverses through an artificial maze formed using white LED strips.

- Uses FPGA based Camera Module to detect lanes and beacons. Further, used RGB thresholding to identify colored beacons.
- Programmed ESP32 micro-controller in C++ to read data from FPGA using UART and to communicate between the web-app. Multi-threading used to simultaneously achieve tasks.
- ArduinoNano used to balance the rover on 2 wheels using tuned PID controller to guide stepper motors.
- Built frontend React.js based webapp for control panel. Python based backend and pathfinding algorithm built to autonomously control rover with a DynamoDB database.
- For a demo of the balancing task of the project view: Balancing_Video

RISC-V CPU 11/2022 – 12/2022

SystemVerilog CPU Design

- Designed a multi-stage pipe-lined CPU compliant to RISC-V 32-bit integer instruction set architecture in SystemVerilog.
- Built both pipelined and data cached version of the CPU
- Includes an independent C++ test-bench which can be used to assert the functional correctness of any given CPU.
- GitHub automation was deployed to prevent failures from creeping into main branch
- Worked on RTL Design, TestBenching, Workflow automation

OTHER SKILLS

- Knowledge of Python docstring conventions for open-source contribution.
- Experience with Agile and DevOps methodologies
- Worked with scrum project management system and used tools like Workfront, Workday, Monday.
- Completed Goldman Sachs Engineering Virtual Program.
- Writing documentation and reports in Markdown and LaTeX
- Extracurriculars & Hobbies: Volunteering, Badminton, learning new medicinal and scientific findings.
- Badminton World Federation (BWF) International Series Selectee - Representing UAE.
- Excellent PowerPoint skills, including morph transitions for 3D Models.