YANJUN YANG

+44 7960 011793/+86 150 7499 5687

yanjun.yang@ed.ac.uk

blog.yanaerobe.top

EDUCATION

Tongji University   Sept, 2017 - July, 2021
BEng. in Electronic Science and Technology   *Shanghai, China*

· Core units taken: Design and Analysis of Digital Integrated Circuits, Computer Architecture, Principles for Design of Integrated Circuit Chips, Embedded Systems

Nanyang Technological University   Aug, 2021 - Aug, 2022
MSc (Electronics)   *Singapore*

· Core units taken: Digital Integrated Circuit Design, Electromagnetic Compability Design, Genetic Algorithms and Machine Learning, Advanced Wafer Processing, Integrated Circuit Packaging

The University of Edinburgh   Sept, 2022 - present
PhD Candidate, IMNS   *Edinburgh, Scotland*

· Supervisors: Alex Serb, Themis Prodromakis
· Research theme: Cognitive processing system implementation based on memristor associative memory

RESEARCH EXPERIENCE

ASOCA2   Nov, 2022 - Dec, 2023
The University of Edinburgh   *PhD Sub-project*

· Successful tape-out of a memristor-based associative memory SoC
· Core digital hardware developer and verification engineer

ReMap: a Mitchell-based logarithmic conversion circuit   Aug, 2021 - July, 2022
Nanyang Technological University   *MSc Dissertation Project*

· Optimised a Mitchell-based binary logarithmic approximation method
· Implemented and evaluated corresponding integrated circuits

Design of a hierarchical memory management mechanism   Aug, 2021 - Jan, 2022
Tongji University   *Part-time Internship*

· Led a hierarchical SRAM-flash interface design with page replacement algorithm
· Applied the design on an automobile-orientated MCU

CoNM: Core of Normal Microarchitecture   Mar, 2021 - Jun, 2021
Tongji University   *Graduation Design*

· Designed a four-stage RV32I CPU core with static branch prediction in Verilog
· Implemented onto PYNQ-Z1 FPGA board for a successful verification

CURRENT PROJECTS

ASOCA3-FPGA   Jan, 2024 - present
The University of Edinburgh   *PhD Sub-project*

· Developing a graph database accelerator system at million-entry level
· Fully in charge of architecture iterating

Saliency detector   Feb, 2024 - July, 2024
The University of Edinburgh, STMicro   *PhD Sub-project*

· Developing a defect detection and recognition algorithm in half-symbolics

ASOCat   Sept, 2022 - present
The University of Edinburgh   *PhD Sub-project*

· Building a Copycat-based cognitive model compatible with an associative memory chip
· Designing and implementing its software/hardware interface

PUBLICATIONS

A Hardware-friendly Database Structure For Storing Semantic Information in First-order Logic   Apr, 2023 - Dec, 2023
The University of Edinburgh   *PhD Sub-project*

· Proof and theoretical simulation of novel graph database structures
· Demonstration of a novel graph database process representation

A Single-layer Wideband Microwave Absorber with Reactive Screen, A Novel Design of Microwave Absorber for Reduction of Radar Cross Section   Dec, 2019 - May, 2020
Tongji University   *Second Author*

· In charge of HFSS antenna simulation and analyses of experimental data
· Published two academic papers accepted by IEEE AP-S/URSI 2020 as the second author

PROFESSIONAL SKILLS

Familiar with both FPGA and digital ASIC workflows.

Programming Languages

· Proficient in SystemVerilog/Verilog
· Skilled in Python, Bash, Tcl
· Competent in C/C++, VHDL
· Developing skills in CHISEL

Professional Software

· Skilled in Synopsys, Vivado, Cadence
· Good command of MATLAB, ModelSim
· Good knowledge of HFSS, ISE, Keil

Languages

Native in Mandarin and New Xiang, proficient in English

· IELTS 8.0/9.0 (2020), equivalent to CEFR level C1
· Elementary reading proficiency of French

WORKSHOPS

2nd International Workshop on Deep Learning meets Neuromorphic Hardware September, 2024
Vilnius, Lituania

A modular graph database accelerator

TEACHING

The University of Edinburgh   1st Semester, 2024

· Demonstrator - Digital Systems Design 2
· Marker - Embedded Systems Design 2

Digital Systems Design 3   2nd Semester, 2024

· Demonstrator - Digital Systems Design 3

HONOURS AND AWARDS

Tongji University   1st Semester, 2017
Advanced Summer Internship Individual

· Awarded for the great performance during summer internship

Tongji University   1st Semester, 2019
Outstanding Student Cadre

· Awarded for the outstanding work as minister of Rights and Welfare Department in Students' Union

INTERESTS

Prefer *Scotches*.

$\frac{1}{2}$ geek, $\frac{1}{2}$ bartender.

Jay Chou and Aska Yang fan.

(Was) Practising the harmonica.

Reads Kafka, Hai Zi, Shelley and Allan Poe.

Always plannig to do something in film criticism and lyric writing.