NGUYEN VAN BINH

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EDUCATION

National University of Singapore **Aug 2020 – Present (Expected: May 2024)**

Bachelor of Engineering, Computer Engineering, Minors in Management and Data Engineering

- Cumulative Average Point (CAP): 4.9/5.0 – Dean's List
- NUS Overseas Colleges Program, NOC Paris (2023): participated in entrepreneurship program at Université PSL

SKILLS

Programming Languages	Python, C/C++, Java, RISC Assembly
AI/Machine Learning	Scikit-Learn, PyTorch, TensorFlow, Keras, AWS SageMaker, MLflow
Database/Data Processing	RDBMS, PostgreSQL, Hadoop MapReduce, Spark
Web Development	FastAPI, Django, Django REST Framework, HTML/CSS/JavaScript
Others	Docker, Azure/AWS Cloud Services, FPGA Programming, Airflow, DVC

EXPERIENCE

Data Science Intern, Science Feedback (Paris, France) **Feb 2023 – Aug 2023**

- Developed web domain credibility ranking models using connections between domains with label propagation algorithm and graph neural networks, built end-to-end ML pipeline, and deployed models in production using FastAPI
- Built data infrastructure (data warehouse, computation, data versioning, orchestration) on Azure Cloud Services
- Explored and analyzed data scraping tools for social media platforms to gather insights for fact-checking tasks

Machine Learning Engineer Intern, Neuron Mobility (Singapore) **May 2022 – Aug 2022**

- Trained and deployed machine learning models for scooter parking image classification on AWS SageMaker that achieve > 95% accuracy, detect bad parking behaviors with 0.9–0.98 precision scores and save US$200,000 annually
- Proposed and built backend for an in-house annotation platform using Django REST Framework and Docker
- Performed experiments with RK1808 neural processing unit (NPU) for on-chip surface detection task on scooters

Research Assistant, SEEDER Group – National University of Singapore **Jan 2022 – Dec 2022**

- Analyzed the tradeoffs in learning algorithms for spiking fully connected and convolutional neural networks
- Designed architecture and wrote assembly instructions for spiking neural network hardware accelerators on FPGA

Teaching Assistant, School of Computing – National University of Singapore **Aug 2021 – Dec 2022**

Placed on the Honor List of Student Tutors for Excellence in Teaching, nominated for Teaching Award

Teaching Assistant for IT5003 Data Structures and Algorithms

- Conducted classes of ~20 Master students, reviewed DSA concepts and implementation techniques
- Showcased live coding in Python, provided consultations, graded, and gave feedback to weekly problem sets

Teaching Assistant for CS2102 Database System

- Facilitated teaching and discussion of Relational Algebra, ER model, SQL, and Database Normalization techniques
- Marked and gave feedback on database design and implementation project and weekly assignments

PROJECTS

Laser Tag (github.com/CG4002-B3/hardware-ai – team of 5 – capstone project): Augmented Reality shooting game

- Collected data and trained a model classifying users' actions based on IMU data mounted on users' hands with 96.14% accuracy on test set using Pytorch; translated model to HLS and deployed it on Avnet Ultra96-V2 board
- Designed architecture; debugged and tested full system and other components (game engine, communications)

ActiveNUS (activenus.up.railway.app – pair project – Orbital 2022: Advanced level of achievement): web application promoting efficient time management techniques and study methods

- Managed project schedule, designed and built backend using Django and PostgreSQL, frontend using VueJS
- Complied to standard Software Development Life Cycle (planning, designing, developing, testing, and deploying)

RTOS Project (github.com/nvbinh15/cg2271-rtos-project – team of 4): semi-automated car with light and sound functions based on Keil RTX real-time operating system running on KL25Z board, breaks course's running time record

- Designed hardware and software high level architecture; implemented motor movements and communication protocols (WIFI using ESP32 module and UART); developed web controller interface using HTML/CSS/JavaScript
- Managed threads and processes, integrated components (LEDs, motors, buzzers, autorun) to the main module

AWARDS & HACKATHON

- Champions, Vietnam National AWS DeepRacer League, Dec 2019: developed reward functions and trained reinforcement learning models loaded to a physical autonomous car that completed a racing lap in 9.625s
- Bronze Medal, European Physics Olympiad, June 2019

EXTRA CURRICULAR ACTIVITIES

President, Phan Debate Club **Feb 2017 – Aug 2018**

- Led high school debate club of 20 members, organized events, sharing sessions, trainings, and debate competitions
- Collaborated with debate clubs nationwide and reached 1000+ followers on club's social media platforms