NICOLAS SCHMIDT

0459 986 668 | nicolas42@gmail.com | 128 Brookes Street, Fortitude Valley 4006, Queensland

HEADLINES

- Bachelor of Engineering (Honours) dual major 2021
- Professional experience in deep learning 2020 and sensor prototyping 2019
- Thesis in legged robotic locomotion at CSIRO
- Deans Award for Academic Excellence 2017
- Vacation research on hardware programming 2018
- Bachelor of Applied Science 2004

OBJECTIVES

I am excited about improving software quality and high-tech manufacturing

SKILLS

C/C++ · Python · Bash · HTML · Javascript · CSS · Go · Java · Matlab · micropython · VHDL · Rebol · Linux · Windows · MacOS · Ubuntu · Amazon Linux · Boto3 · OpenCV · Pytorch · Tensorflow · Numpy · AWS · EC2 · S3 · Lambda · SES · Cloudwatch · RDS · DynamoDB · Sagemaker · Step Functions · IAM · AWS SDK

EDUCATION

Bachelor of Engineering (Honours) with a dual major in Electrical and Computer Engineering from The University of Queensland

March 2017 - November 2021

Team projects · C · Linux · Python · Java · Machine learning · Embedded systems · Rigorous mathematical proofs · Electromagnetism · Electric motors · Electronics · Circuit analysis

- Honours Class IIA with a GPA 6.0
- Thesis in legged robotics at The CSIRO Queensland Center for Advanced Technologies. Curriculum reinforcement learning was used to achieve stable running gaits for a large quadrupedal robot in 3D physics simulations.
- All my team projects received very high achievements

University Projects

- Programmed a STM32 embedded system with an e-ink display, an SD card with a FAT32 file system, and a freeRTOS real time operating system, in C
- Built a multiple stage audio amplifier and filter using BJT and FET transistors
- Programmed a "Frogga" game in C on an Atmega324 microcontroller using an LED screen and a joystick
- Designed and printed a PCB using Altium

- Reconstructed a voxel-represented 3D object using matrix mapping between it and several surrounding 2D images
- Created an educational website on space travel "The Elephant andthe Balloon"
- Made a bluetooth network localisation system (team of 2) for attenuating bodies using the zephyr operating system in C and Python

Vacation Research, Queensland University of Technology

November 2017 - March 2018

- Contributed to the development of a FPGA convolutional edge detection system in VHDL using an Artix-7 FPGA Development "Arty" Board and a Raspberry PI version 2.
- We presented the results at The Australian Centre for Robotic Vision
- Technologies used: VHDL, Vivado development environment, Raspbian Linux, Bash, UART, PGM image format

Bachelor of Applied Science majoring in Biochemistry, Queensland University of Technology 2001 - 2004

PROFESSIONAL EXPERIENCE

Machine Learning Developer, Bitwise Agronomy

June 2019 - October 2020

I developed the machine learning technology for this company. It used an amazon web services backend to run yolov3 object detection instances on farming videos.

- Primarily python programming in a terminal environment, but also used C/C++, node, HTML/javascript/CSS, and Go.
- Created demo videos which created buzz for the company which was then featured in the startup incubator farmers2founders
- Trained staff in labelling and inference
- Documented internal processes
- Created statistical reports for clients
- Implemented object counting strategies using tracking, image stitching, and key-frame detection

Sensor Developer, Bitwise Agronomy

June 2018 - June 2019

- Built and programmed several wireless sensor clusters using pycom microcontrollers and micropython.
- The sensors intermittently measured environmental data and wirelessly transmitted the information to servers for statistical analysis and visualization.
- Programmed and tested temperature, pressure, humidity, moisture, UV, RGB, gas, and smoke sensors.

REFEREES

available on request