Kwok Hung (John) Ho

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EDUCATION

UNIVERSITY OF CALIFORNIA SAN DIEGO
MS in Intelligent Systems, Robotics & Control
Expected: Jun 2023 | La Jolla, CA

UNIVERSITY OF CALIFORNIA SAN DIEGO
BS in Electrical Engineering
Graduated: Jun 2021 | La Jolla, CA

LINKS

Portfolio:// **johnkhh**
LinkedIn:// **johnkhho**
Github:// **johnkhk**

COURSEWORK

GRADUATE

Convex Optimization
Digital Image Processing
Sensing & Estimation in Robotics
Planning & Learning in Robotics
Networked Systems with Go
Functional Programming in Haskell
GPU Programming in CUDA
Reccomender Systems & Web Mining
(Research Asst. @ surgical robots lab)

UNDERGRADUATE

Analog Design
Active Circuit Design
Linear Control System Theory
Machine Learning
Software Design
Object Oriented Programming
ARM Assembly Programming

SKILLS

PROGRAMMING

Strong:
Python • C++ • JavaScript
Familiar:
Go • Java • C • C# • MySQL
Haskell • LabVIEW • Verilog • CUDA

WEB DEVELOPMENT

React • Node • Django
Angular • ASP.NET • Vue
REST APIs • GraphQL

TOOLS & FRAMEWORKS

Git • Docker • Shell • CMake
PyTorch • TensorFlow • ROS
Pandas • NumPy • Grafana • Matplotlib

EXPERIENCE

3D SYSTEMS | Data Scientist Intern

Jun 2022 - Sep 2022 | San Diego, CA

- Created a fleet-monitoring system for all 3D bio-printers, improving employee workflows by 40% by enabling remote monitoring and download of logs.
- Developed REST APIs and database schemas using Entity Framework and MSSQL database, enabling efficient processing of 3 data migrations.
- Integrated an auto-focus procedure in C++ into firmware for the projector system of all 3D bioprinters, reducing focusing time from 1 hour to 5 minutes.

APPTECH | AI Specialist Intern

Jun 2021 – Sep 2021 | Science Park, Hong Kong

- Quantized deep learning models using TensorFlow Lite for TPU camera deployments, improving CPU latency by 4x with negligible accuracy loss.
- Trained a face detection and face-mask classification model utilizing transfer learning with PyTorch with a 91% F1 score. Deployed the model in over 10 shopping malls in Hong Kong to ensure proper mask usage during the pandemic.
- Designed an algorithm to detect unattended suitcases at the airport by training vision models for humans and suitcases, improving airport security by 30%.

RISKSIS | Software Engineer Intern

Mar 2021 – Jun 2021 | Science Park, Hong Kong

- Deployed ETL pipelines with Python to retrieve text from over 2,000 PDFs, analyze text using Natural Language Processing (BERT/XLM-RoBERTa) and then storing the data in a MongoDB and Elasticsearch database.
- Architected a Vue and ASP.NET app that enabled users to query the databases through REST APIs, resulting in a 50% reduction in query processing time.

ASTRI | Software Engineer Intern

Jun 2019 – Sep 2019 | Science Park, Hong Kong

- Pioneered an augmented reality (AR) application for the Microsoft HoloLens using Unity/C#, allowing users to spawn objects using hand gestures on AR tags. Increased user engagement by 30% when touring digital warehouses.

PROJECTS

CRYPTOTRACKER | Demo

- Built a MERN stack website that tracks cryptocurrency prices/news.
- Enabled user sign-in, customization of dashboards, authenticated routes with JWT, and keeps users logged in with session cookies.
- Hosted the front-end on Vercel, and back-end on AWS EC2.

MULTI-AGENT Q-LEARNING (GPU) | Demo | Presentation

- Implemented asynchronous parallel Q-learning and Q-lambda learning using C++ and CUDA. The RL environment consists of a 32x32 grid, 96 mines and 128 agents that learn in parallel to reach a single flag.
- Optimized the efficiency by 20% using the Nsight debugger and profiler.

SLAM WITH TEXTURE MAPPING | Code | Paper

- Developed an efficient particle filter SLAM from scratch with Python for a self-driving car using lidar, wheel encoder and gyroscope data.
- Implemented Kalman filter SLAM with additional IMU and stereo data.