DAVID RYAN

Software Engineer
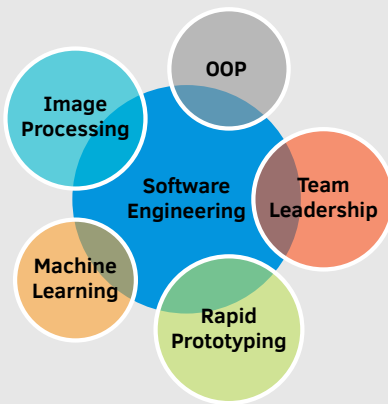
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Skills

Overview

Programming

Modern C++

Python • MATLAB • C

Verilog • VHDL

Projects

ViDAR - Automated detection of targets in maritime environments, using real-time Ultra HD image processing.

Airports of the Future, *Australian Research Council*, Linkage LP0990135, Project value $9M. Live trials of crowd counting and virtual gate technologies to monitor queue parameters in real-time. Deployed at Brisbane International Airport for Australian Customs and Border Protection Service.

Intelligent Surveillance Research for Crowd Monitoring & Event Detection, *National Security Science and Technology Unit (NSST)*, Project value $795K. Responsible for three out of the nine key milestones (pertaining to crowd & queue monitoring).

Personal Summary

- Highly-driven software engineer with 10 years of C++ experience.
- Specialising in image processing and real-time computer vision.
- Natural aptitude for leadership.

Education

2013	**PhD, Computer Vision**	
	Queensland University of Technology (QUT), Australia	
2008	**BEng, Electrical and Computer Engineering** (GPA: 6.5/7.0)	
	Queensland University of Technology (QUT), Australia	

Experience

Present 2018 — Team Lead – Computer Vision — Sentient Vision

Coordinated a team of computer vision developers to deliver a multi-camera visual detection system under a short timeframe.

- Coordinated with commercial team to prioritise work, delegated tasks to the software team.
- Developed long-term plan for the next generation of deep-learning based systems.
- Involvement from algorithm design → code review & testing.

2018 2015 — Computer Vision Engineer — Sentient Vision

Built visual detection analytics for Maritime and Search & Rescue applications.

- Reduced memory footprint of the analytic by 50% and CPU consumption by 40%, within my first few months.
- Designed and implemented new CV functionality.
- Trained new engineers in the codebase & analytics.

2014 2013 — Project Coordinator — QUT

Designed & implemented new computer vision algorithms for crowd monitoring, anomaly detection and automatic camera calibration using pedestrian detection.

- Large-scale evaluation of computer vision algorithms.
- Academic supervision to students & researchers.
- Served on review panels for PhD defence seminars.
- Developed GUIs for crowd monitoring applications.
- High quality journal article publications.

Research

2013 2009 — PhD Candidate — QUT

Crowd Monitoring Using Computer Vision

- Developed novel crowd monitoring algorithms in multi-camera networks: crowd counting, crowd flow estimation, queue monitoring, abnormal event detection.
- Experienced in camera calibration, background modelling, feature detection, optical flow and pedestrian detection.
- Successfully implemented & utilised machine learning algorithms, such as hidden Markov models (HMM), Gaussian process regression (GPR) and neural networks.
- Publications and demos: **http://dryan.id.au**

References

Available on request.