

Dennis Lui

PERSONAL DATA

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CITIZENSHIP: Australia, Permanent resident of USA

SUMMARY

I have more than 15 years of combined experience in the fields of computer vision, robotics and assistive technologies primarily functioning as a technical manager, product-focused architect, software developer and researcher.

Throughout my career, I have consistently nurtured industry projects into standalone products or core product features, showcased key technologies through Proof-Of-Concepts and product demonstrations, turned research ideas into high quality papers and prototypes, and developed new and differentiated solutions to customers.

I am a highly focused and self motivated individual who enjoys working in a team, building systems that interact with the world and solve impactful real world challenges.

WORK EXPERIENCE

Current JUN 2022	Sr. SW Engineering Manager at NVIDIA, Santa Clara, USA <i>Autonomous Machine Solutions</i>
JUN 2022 FEB 2020	SW Engineering Manager at NVIDIA, Santa Clara, USA <i>Autonomous Vehicle Solutions</i> Manage and technically lead a highly cross functional s/w team across the globe to enable, develop and support the integration and deployment of autonomous vehicle solutions to our partners (also known as the NVIDIA DRIVE solutions). Our partners include but are not limited to OEMs, Tier-1s, higher education research institutions and startups. The domain of this cross functional team spans end to end; from software architecture to software development, and from sensor evaluation to perception and planning & control.
FEB 2020 OCT 2019	Lead Solutions Architect at NVIDIA, Santa Clara, USA <i>Autonomous Vehicles</i>
OCT 2019 NOV 2016	Sr. Solutions Architect at NVIDIA, Santa Clara, USA <i>Autonomous Vehicles</i> Software solutions architect for autonomous driving technologies with a core focus on NVIDIA's self driving software stack (specifically DriveAV and DriveWorks which is a part of NVIDIA DRIVE software). Responsible for leading multiple impactful autonomous vehicle projects in close collaboration with technical leaders and engineers from OEMs, Tier-1s and start-up. Key responsibilities and achievements: <ul style="list-style-type: none">• Technical lead for virtual team(s) to ensure timely customer program deliverables. Led the team(s) through multiple program milestones on a number of active customer programs.• Technical lead for numerous Proof-of-Concepts (PoCs) and product demos. One of these efforts led to the following public video• Drive software architecture and participate in design reviews• Hands-on with end to end system integration. Deeply involved with the development of effective key performance indicators, processes and ensure that various hardware and software components are integrated effectively.• Own the technical relationship and assist automotive customers to build innovative solutions based on Nvidia technology.• Evangelize Nvidia technology. Notable public presentations include but not limited to<ul style="list-style-type: none">- DriveWorks presentation at GTC 2017 (>500 attendees)- Tutorial about deep learning and autonomous vehicles at Hotchips 2017 (>200 attendees)- Multiple DRIVE Developer Day presentations (>150 attendees on average)
SEP 2016 DEC 2014	Sr. Software Engineer at BLACKMAGIC DESIGN, Port Melbourne, Australia <i>Professional Cinema Cameras</i>

[Blackmagic Design](#) is an Australian manufacturer of electronic equipment for broadcasting and video production. I was a member of the image sensor calibration team responsible for optimizing the image quality for its range of professional cinema cameras. Key responsibilities and achievements:

- New camera product bring up. [Link to camera products](#)
- Support and enhance automated manufacturing software systems
- Provide in depth technical analysis on image sensor calibration

NOV 2014 Software Engineer at ANCA, Bayswater North, Australia
JAN 2013 *CNC Tool and Cutter Grinders*

[ANCA](#) is a market leader of high quality CNC tool and cutter grinders. I was a member of the software research and development team responsible for new applications and features for ToolRoom (core application software for ANCA CNC tool grinders). Key responsibilities and achievements:

- Research and develop new applications and features for [ToolRoom](#)
- Prepare software functional requirements and design documents
- Delivered 3 major projects that meet all requirements on time and within budget:
 - Technical lead and primary software developer for semi-automatic in-machine vision-based measurement system
 - Lead software developer for cylindrical grinding operation
 - Lead software developer for formed flute from solid operation

JAN 2013 Sr. Research Engineer at MONASH VISION GROUP, Clayton, Australia
FEB 2011 *Bionic Vision and Assistive Technologies*

The [Monash Vision Group](#) is a collaboration between Monash University, Alfred Health, MiniFAB and Grey Innovation dedicated to developing a direct to brain bionic eye ([Video](#)). I was a member of the signal processing team. Key responsibilities and achievements:

- R&D on image processing algorithms suitable for bionic vision. [Project link](#), [Video](#)
- R&D on non-invasive assistive technologies. [Project1 link](#), [Project2 link](#)
- Identification of stimulation parameters for psychophysics experiments
- Image processing algorithm development for embedded systems. [Video](#)
- Published 6 papers and 1 poster in top ranking conferences (ISMAR, EMBC, ICIP, ICRA and ACRA).
- 1 national phase patent (US, CA, EU, AU, NZ)
- Mentor to 3 PhD candidates

FEB 2005 Engineering Intern at FREESCALE SEMICONDUCTOR, Malaysia
NOV 2004 *New Product Development*

In fulfillment of my engineering degree requirements, I completed my internship with Freescale Semiconductor (previously known as Motorola) as a member of the New Product Development team. Key responsibilities:

- Identify and analyze key effects of system parameters for wire bonding machines using a laser interferometer
- Improve plasma cleaning process

EDUCATION

2007-2011 Ph.D. in COMPUTER VISION AND ROBOTICS, **Monash University**, Clayton, Australia
Thesis: "Autonomous Robot Navigation Appearance-based Topological SLAM"
Advisor: Prof. Ray JARVIS | More Info: [Project Link](#)

2003-2006 Bachelor of ENGINEERING, **Monash University**, Sunway, Malaysia
1st Hons, Overall Best Graduate Award | Major: Mechatronics
Thesis: "Design and Implementation of the Khepera II using Webots"
Advisor: Velappa GANAPATHY | More Info: [Project1 Link](#), [Project2 Link](#)

PROFESSIONAL ACTIVITIES

- Program committee member, Australasian Conference on Robotics and Automation, 2011-2012, 2016-2023.
- Program committee member, NVIDIA NTECH Conference: Emerging Technologies, 2020.
- Program committee member, Workshop on Robot Vision, Tampa, Florida, 2013 (in conjunction with the IEEE Winter Vision Meeting 2013).
- Session chair for *RGB-D Localization and Mapping* track, IEEE International Conference on Robotics

and Automation 2012.

- Reviewer for top conferences and journals (ICRA, IROS, RSS, ACRA, RAS, IJRA)

SKILLS

Programming/ APIs/ Operating Systems

- C/C++ (Proficient)
- Java (Proficient)
- Computer vision libraries: OpenCV, libcvd, TooN and ARToolkit (Proficient)
- GPGPU Programming: Nvidia CUDA (Proficient) and OpenCL (Some experience)
- Matlab (Proficient) and R (Some experience)
- NI LabView (Some experience)
- Development on embedded systems (Some experience)
- Development in Linux, Windows and Mac environments (Proficient)
- Robotic Operating System (Some experience)
- Extended Part Programming Language (Proficient)
- Qt and Boost libraries (Proficient in some areas)
- Python (Some experience)

Tools

- Version control systems: Git and Clearcase (Proficient)
- CMake (Proficient)
- LaTeX (Proficient)
- IDEs: XCode (Proficient), Visual Studio (Proficient), Eclipse (Proficient), MonoDevelop (Some)
- AutoCAD and Solidworks (Some experience)

Languages

- Fluent in English and Cantonese, proficient in Malay and conversational in Chinese.