

Christopher P. Knight

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An extensive portfolio in Industrial Design in a variety of facets which include high level security and sensitive military designs for international clients. Throughout my career I have designed technologies that are continually updated and still in operation. These designs include Data Recorders for vessels, Access Control Systems for International Airports, and classified and declassified Military Hardware. My strong analytical concepts have provided me with the vision to foresee projects from inception to completion. While employed in these sensitive environments my appreciation for integrity and confidentiality have never been questioned nor challenged. Communication, teamwork, and attitude are character traits that I firmly believe are essential to the success of any organization.

Areas of Expertise:

+25 years of experience creating industrial design engineering solutions, product prototyping, mechanical engineering, 2D drawings, 3D visualization, and 3D solid modeling for manufacturing, electronics design, schematic layout and prototyping.

Technical Knowledge:

- Industrial design and prototype modeling
- 2D and 3D CAD/solid modeling
- Manufacturing and fabrication processes and procedures
- Metals, composites, plastics, glass, and wood materials
- 3D printing for prototype modeling
- Industrial screen printing
- Fiber optic technologies for network communications, audio and video applications
- Electronics design, schematic layout and prototyping
- Boundary Layer Wind Tunnel test-models, Water Flume Tank test-models

Achievements & Certifications:

- International patents for the Blast Resistant Camera partnered with Visual Defence Inc., 2009, patent listings: CA2737079A1, US8294790, US20100073493, WO2010034104A1
- Awarded high-level security clearances for entry into USA for work related projects endorsed by U.S. Department of Homeland Security (DHS) conducting extensive blast testing with US Army, Project BRAVE, ATC, Aberdeen Proving Grounds, Baltimore, Maryland (2009)
- Instrumental lead in Visual Defence Inc. successful design and execution of Blast Resistant Autonomous Recording Equipment (BRAVE) for U.S. Department of Homeland Security (2009)
- Instrumental lead in Visual Defence Inc. being awarded approved design specifications through the Volpe Center (U.S. Department of Transportation's Research and Innovative Technology Administration) for the U.S. Department of Homeland Security

- Instrumental lead in Visual Defence Inc. being awarded SECURE Certification (System Efficacy through Commercialization Utilization Relevance and Evaluation) for SecurEye system by the U.S. Department of Homeland Security Science & Technology Directorate (2011)
- Achieved notoriety through media driven news releases, video presentations, television documentaries with CNN, Reuters, Discovery Channel's Daily Planet, and a host of online web presentations and print media publications worldwide.
- United States Airforce Award received for the unique design, prototype, and successful testing of a Mass Drive Accelerator
- Certified fiber optic technician (member FOA/MTC 2013)

Software Applications:

- McNeel & Associates, Rhinoceros 3D Engineering Design Software (NURBS based solid modeling, CAD drawing) exporting to all relevant CAD and 3D solid modeling file extensions
- Adobe Suite (Illustrator, Photoshop, InDesign, Premier)
- Digidesign ProTools Audio Suite
- Sony Vegas Video Editing
- Microsoft Office Suite (Word, Visio, PowerPoint)

Professional Experience:

Visual Defence Inc., Richmond Hill, Ontario

2004 – 2017

Position: Product Design, Mechanical Drawings, 3D Solid Models

Overview:

- **Smart Switch**

Assisted in-house electronics engineering department to design features into the Visual Defence *SmartSwitch* technology, a redundant system failover device for transferring programming and data (with regular updates) from one CPU to another in the event of failure

- **Access Control Door Node Test-Bed**

Designed and built fully functional access control test-bed to accommodate 64 doors (as in an airport terminal) for proving engineered capabilities of the Visual Defence *Smart Switch* and for troubleshooting issues which might arise in large access control projects

- **Ruggedized Ship Console** (Israeli Navy Sa'ar 5-Class Missile Corvette)

Design ruggedized special operatives console series for main-deck tier installation on INS Hanit, Sa'ar 5-class Missile Ship (Northrop Grumman)

- **Blast Resistant Camera and Memory Module** (Project BRAVE, U.S. Department of Homeland Security (DHS))

Design Camera and memory module to conform to specifications outlined by DHS, to be deployed in transit vehicles for data-capture of potential threats in the war against terrorism

- **mPress** (Access Control Interface)

Design IP65, half-duplex intercom device containing proximity reader, vandal resistant pushbutton, and graphical user interface LED lighting effects

- **Help Phone Security Phone** (Duress Station for Stockholm Lokaltraffik Transit, SL)

Design look and feel of wall mounted IP65, full-duplex intercom device containing vandal resistant pushbutton, digital PTZ camera, lighting effects, and multi-level speakers and microphones to fully accommodate public access for use at bus and train station platforms.

RWDI Wind Tunnel Research Laboratories, Guelph, Ontario

1996-1998

Position: Prototype Designer/Model Builder/Software Beta Tester

Designed and built force-balance and pressure-tap scale buildings, bridges and other test subjects for wind tunnel and water flume testing

Build and implement 3D virtual wind tunnel design using experimental proprietary software and, in combination with computational fluid dynamics (CFD) software plugins to verify resulting modeled airflow metrics compares with real-world wind tunnel airflow metrics

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1987 – Present

Position: Industrial Designer | Inventor

- **INKAS Aerospace Anti-Drone Tracking Systems**

Designed Anti-Drone Tracking Systems prototype utilized in rapid-deployment situations, remote applications for border security, and in mobile applications. Systems are designed to track, identify and eradicate drones utilizing a plethora of on-board electronic jamming systems, or alternately signalling automated hard-kill weapons stations. The system operates on a plethora of technologies unique and proprietary to this project (CLASSIFIED, 2022)

- **INKAS Aerospace Improvised Explosives Electronics Jamming System**

Designed IE (improvised explosives) Electronics Jamming System prototype to be utilized in military land vehicles such as army personnel carriers and armoured vehicle escorts for diplomats and high-level dignitaries. Defeating threats of terrorist attacks, the system operates on a plethora of technologies designed to jam frequency signatures of remote detonation devices. (CLASSIFIED, 2019)

- **eVent | electronic Vent** (greentech solution)

Masterminded automated heat register concept for residential and commercial forced-air heating and cooling applications and designed system architecture to effectively balance airflow through ductwork to permit room-to-room temperature comfort levels via wired or wireless technologies (2006)

- **OASIS Condenser | Passive Atmospheric Moisture Condenser** (greentech solution)

Designed and built passive atmospheric moisture harvesting condenser and designed system architecture to effectively remove moisture from hot and humid air through a plethora of technologies (2008) (Patent Pending, U.S. Patent Office)

- **Dual-Layer Environmental Chamber** (greentech solution)

Designed and built dual-layer environmental chamber to model real-world global biome changes relative to atmospheric temperatures and humidity, and subsurface temperatures, purpose-built for testing **OASIS Condenser** passive atmospheric moisture condenser and its effectiveness in specific global regions (2013)

- **Passive Air Conditioning System** (greentech solution)

Masterminded passive air conditioning system concepts for residential and commercial applications (2010) and designed system architecture to effectively remove a volume of hot and humid air from an environment and replace it with an equal volume of cool dry air (2014)

- **Hardened Memory Containment Data Storage Device** (partnered with W. Sabourin)

Designed and built hardware and system architecture for memory containment and data transfer device. The military spec device is hardened to resist a plethora of designed conditions or those onset by natural and/or man-made disasters (2011-Present) (Patent Pending, U.S. Patent Office)

- **Additional Client Projects:**

Built prototypes and display models, created 2D technical drawings for clients as DCIEM (Department of Space Medicine), Foster Wheeler USA, Babcock Wilcox, De Havilland Aircraft Corporation, Canadian Armed Forces, Dalsa CCD Engineering

References Available

www.cknight.ca