

Peter Dunne

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Renaissance Engineer, Inventor

Business savvy multi-discipline engineer with a proven track record of creating advanced technologies encompassing design of Electronics, Communications, Embedded, Web and Application software, Mechanical, Thermodynamics, Electro-magnetics and Aerodynamics.

I own an advanced technology portfolio developed over a number of years

Author & Legal Advocate

- **Independent Researcher / Litigant in Person**
- Author of *Cutout: The Man. The Indictment. The Record. The Reckoning.*, an autobiographical legal reference documenting 22 years of systemic injustice and institutional cover-up in the UK and Ireland.
- Acting entirely as a **litigant in person**, I filed identical case papers in both UK and Irish courts, uniquely bridging jurisdictions to challenge entrenched misconduct. Leveraging international geopolitical context, including Palestine, I compelled exposure of state and institutional prejudice and failures.
- Through detailed analysis of official records and court documents, I **demonstrated the total collapse of all warrants, judgments, and rulings** across extradition, magistrate, family, circuit, high, and appellate courts, using the authorities' own evidence against them.
- This work involved extensive legal research, management of extensive evidence archives, and preparation of filings at the **High Court level**, establishing expertise in comparative law, human rights, and systemic accountability. It exemplifies **resilience, strategic ingenuity, and operational discipline**, transforming personal injustice into a documented reckoning of institutional failure.

Consultation

January 2022-present

NDA applies, the work cover primarily electronic systems, water purification and energy management

A power supply company, Northern UK

Design Engineer, Nov 2020-Oct 2021

Working directly with the MD, my brief is the design of high voltage, very high energy supplies primarily for lasers and flash lamps

I have built an industrial lamp supply with simmer unit and high energy flash discharge utilizing PSFB supplies and a unique LLC with exceptional voltage control and efficiencies

Elis Industrial Laundry, Coventry, UK

Maintenance Engineer, Dec 2019, Nov 2020

Elis Coventry is a healthcare laundry and I was one of the team responsible for maintenance of Boilers, Continuous Batch Washing Machines, Folders, Ironers and various other machines.

A Thermodynamics Research Company of Singapore

Senior Systems Engineer, 2016 to Sept 2019

Disruptive Thermodynamics are specialists in highly advanced thermodynamics, focused on high efficiency, water generating hybrid air-conditioners with exceptionally low impact refrigerants. These units are specifically designed for arid regions suffering water stress.

I joined with no HVAC experience and in less than four years, I helped lead a team of innovative engineers and scientists to build some of the most advanced Air Conditioners in existence.

At Disruptive I

- invented a new class of compressor which is oilless, optimized for mass production, efficient, reliable and quiet operation, it is the fifth compressor I have invented
- Co-invented with Dave Weinstein along with 2 additional compressor types
- Invented a non-cavitating pump related to the compressor and suited to biofluid applications, including blood & plasma
- Developing several new approaches to PFC/SMPS and VFD designs
- invented a new type of expansion control which is projected to improve HVAC system efficiency by more than 3% compared to standard expansion valves
- invented an optic biosensor, a hybrid of visual and spectral analysis designed for low cost mass production, continuous monitoring and high confidence detection of bacteria and algae contaminants in water and other liquids
- Co-invented several new methods for manufacture of microtube heat exchanger design

At [REDACTED] we have built machines that produce substantial quantities of distilled water, are twice as efficient, use 95% less refrigerant, use low GWP refrigerants which surpass the Kigali amendment requirements with ease.

I helped to manage the scientific and engineering team that achieved those goals, goals that I also helped to define.

Self-employed, home maintenance

Jan 2007 to January 2016

Working with my colleague [REDACTED] who is a qualified engineer/plumber, we engaged in all manner of home maintenance with the exception of Gas & Electric

In addition to being self-employed in maintenance I conducted my own research into language support methodology and systems.

I wrote the language support framework, a sophisticated translation memory system tailored for multilingual web design.

I wrote a classified advertising site to demonstrate the language support framework.

I also researched machine translation, focusing on autonomous linking of ontologies using non-linguistic constants and parameters

<https://wordpress.com/post/jazenga.wordpress.com/617>

<https://jazenga.wordpress.com/2016/08/21/multilingual-software-design-utilizing-embedded-translation-memory/>

Maintenance partnership between 2003 and 2007

Working with my brother, contracting in maintenance and mold making.

Contracting between June 2001 to Oct 2003

Mobile phone repairs, cabinet wiring & warehousing.

Alcatel Telecom, Hardware control center, Banbury

Sept 2000 to June 2001

The hardware control center is responsible for providing a test facility, stock & control of spares and is also involved in pre-commissioning work. I worked as a diagnostics and maintenance engineer at this facility.

Various agency jobs between 1997 & 2000

Among contracts were contracts at Husky Computers (maintenance engineer) and Marconi (2.5gb long haul transmitter calibration)

Self employed engineer

1981-1997

Component level repair of amusement equipment, design and construction of light controls for the amusement industry, writing of utility programs for clients

Consultant engineer designing turnstiles

Electronics engineer

1980-1981

Component level diagnostics & repair on Video games, Pinball machines, Juke Boxes, etc.

My skill set encompasses

Programming: PHP, MySQL, Pascal, Delphi, C, C++, Javascript and assembly covering applications, web, control systems, IDE extensions, property editors, components, networking.

Software & Servers

I am of course familiar with Linux, including servers such as Postfix, Dovecot, SVN, Apache, Nginx, Windows and Android, office packages, version control solutions, multiple IDE's and other development tools.

Engineering: Mig, Arc and Laser welding, Lathes, Mills, Drills, Grinders, Benders, Shears, Rollers, Metal fabrication, Brazing, Hydraulics, Pneumatics.

Electronics: Analog & Digital design, Eagle EDA, LLC, SMPS, PFC, PSFB, Motor power driver design, Microcomputers, FPGA, CPLD, high voltage, high current, fast chargers, Lab power supplies

Networking: Telecommunications engineer with Fiber optic and ADSL specific experience, Routers, Switches, Cisco.

Extended information

Electronics engineering overview

My professional electronics career started when I was just 16 years old, by then I had already built numerous projects including an 8 bit computer when I was 14 (1978)

After I went self-employed I started to design and build light controllers, multiple types for both AC and DC including some DC types using IGBT to implement PWM regulation on each channel

I have also designed multiple products for various clients while self employed, several of which were controlled by microcontrollers and programmed in assembly and C

With Disruptive Thermodynamics, my brief included design and programming of multiple control subsystems utilizing STM32, ATmega 328 & ESP8266, programming in C with the host control application written in Pascal

Up to 110 sensors were used on a single system, along with 15 fans, expansion control and compressor
Later development work was focused on power & control systems for expansion control and compressor drive for several types, FPGA was required to meet timing controls of one of the compressors, a particularly advanced type with no pistons, bearings, shafts or lubricants

My work also encompassed power conversion and conventional motor drive research

With DNG I designed and built a complete dual lamp system for industrial flash lamps with the following per channel specifications,

SIMMER: 400ma @ 200v current regulated to maintain lamp glow, 2kv ignition voltage, 350v trigger voltage, triggering in under 1.5ms

CHARGER: 4.5kw, 530 vdc input, 3.5kv output, continuous current charger into 66uf capacitor, 90ms charge time, approx 95% efficient conversion

LAMP DRIVER: 1200 amp 300us pulse discharge @ 3500 volts, 10 pulses per second at 416 joules each

This system is programmed in C with Schematics & PCB layouts done in Eagle EDA

My current development work in a personal capacity is a modular bench/production test power supply

This deviates from traditional approaches in being both modular and by combining manual and software control of all modules, combined with digital load monitoring of all modules with prototyping of both software and hardware elements already under way

The goal is to provide a far more comprehensive test capability in an easy to customize and cost effective manner using primarily well proven methods with just a small number of new topologies which themselves offer substantial advantages over legacy designs

Software

First development done at 14 years old using Basic & 8080 assembly, followed by ST6 assembly, C, Pascal (Delphi) and dBase for both control and application purposes

Over the years I've developed numerous test and utility programs, primarily in Delphi but also in C, C++ I spent several years researching computational linguistics for multilingual software design, initially in Delphi, later in FreePascal, Lazarus & PHP, developing an entire framework for classified advertising and translation memory, some work was also done on machine translation using my own polylingual ontologies

With Disruptive Thermodynamics, I built several diagnostic tools, programmed in C with the main development work focused on air conditioner control, the first unit having more than 100 sensors, 15 fans and a 27kw compressor, it involved multiple equations such as Martin Hou equation of state to achieve high efficiency, our first unit being in excess of COP 5

The PULSE supply I designed for flash lamps achieves fast precision control by use of DMA with ADC, hardware timers programmed in C coupled with hardware feedback & regulation systems

Engineering

As the son of an industrialist I grew up learning about pneumatics, hydraulics, engines, transmissions, brakes, metalwork, concrete, mold construction, etc.

At 16 I was taught to use lathes and mills by my uncle, a precision engineer and I am competent with fabrication, welding (MIG, TIG, ARC, Laser, gas torch), folders, etc.

I have worked with machine tools while with Disruptive and various times while self employed consultant

While at Disruptive I worked closely with colleagues and specialists from another company to realize microtube heat exchangers using 1830 0.3mm tubes in a package a little larger than an A4 notepad

I also researched three new compressor types where I was the principal inventor, an expansion control which is unique in its energy recovery and a biosensor for the detection and classification of contaminants in water

Compressor design

The first unit I invented is actually a compander and was invented to facilitate the implementation of a new type of continuous burn engine

While it operates on the same principle as a turbojet, it is a positive displacement engine, allowing it to run effectively over a wide power band

The prototype was a 1 litre displacement

My second compressor was to implement a low cost turbojet with multi stage compression

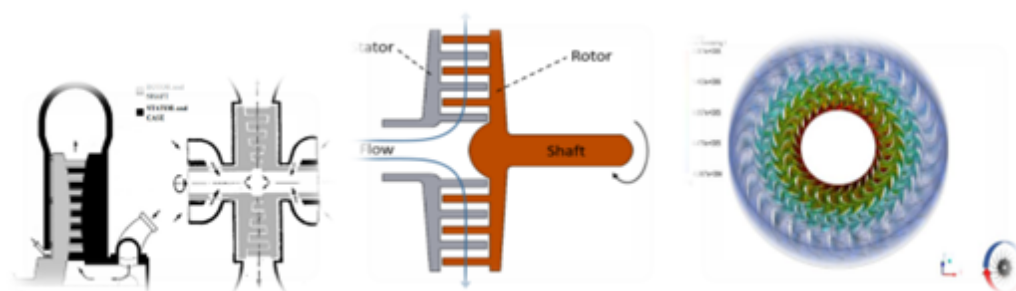
The compressor utilizes an Axial inflow, radial outflow centrifugal first stage of the type seen in turbo chargers, the second and subsequent stages are formed between the compressor disk and the front case

The case housing is lined with coaxial rows of fixed vanes protruding longitudinally from the surface, these are meshed with contra matching vanes on the compression disk, thus forming multi stage compression

This is a dynamic compressor

Australian engineer [REDACTED] assisted me with this concept and together we co-invented a new class of compact, simplified engine concepts for drone and APU gas turbines

This project was later handed off to Rudy Schalk of Rolls Royce Research at their Nanyang Technological University Laboratory



Both my third and fourth compressor inventions were co-invented with [REDACTED] at [REDACTED]

Both types are positive displacement

They are subject to NDA so I am unable to provide specifics at this time

My fifth compressor is a derivative of a pump I invented weeks earlier

Both the compressor and pump are non cavitation types without valves, pistons, gears, shafts, bearings or lubricant

It is a positive displacement device

This compressor has been the subject of significant research at Nanyang Technological University of Singapore and Masters Thesis by student Rahul Sharma with myself as co-supervisor and principal engineer

While the original concept was mine, Dave Weinstein and Rahul Sharma both expanded on this considerably, earning their place as co-inventors

The pump has potential as a precision metering pump to replace peristaltic devices and for development as a body fluids pump, including bloods, a medium which has very specific requirements on dead spots, turbulence and compressive forces

Refrigerant expansion control

Modern refrigerators, heat pumps and air conditioners use vapor compression refrigeration cycle

This requires the use of an expansion control to regulate the compressed refrigerant flow to the evaporator

Traditionally this employs mechanically controlled valve or electronically controlled valve of the solenoid, on/off type or a proportionally controlled valve driven by stepper motor or servo motor

The flow control I invented is of the proportional type but unlike all previous designs, it recovers energy with a projected increase on overall efficiency of more than 3%

Heat exchangers

At [REDACTED] I was tasked with designing microtube heat exchangers

The small dimensions combined with large volumes of tubes make these an engineering challenge

My first proof of concept were all metal, later with the assistance of an engineering company and our scientific team we developed for the construction of Metal/Plastic exchangers

Within 12 months we had completed a prototype AWG AC using 30 microtube panels

This research was initiated by [REDACTED] with myself initially as principal investigator, [REDACTED] (staff) and [REDACTED] (outsourced) later joined, assuming much of my work load to the point it became more a joint effort under [REDACTED] direction

This work resulted in practical prototypes and patent filings