

Kyle Milnes

CTO/SVP | Digital Mastermind

Agile Leader, Mentor, IT Architect, Technologist.

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English: Native German: Fluent



Objectives and Ethos

- Endeavour to be the best at what I do, to raise the bar and set standards in my field.
- To help others succeed and reach their objectives.
- To discover, mentor and train talented individuals.
- To promote excellence in work culture and ethics.
- Seek out challenging and exciting global opportunities.
- To give back and make meaningful contributions to open source projects and "The Internet".
- To support sustainable initiatives and projects.

E.g. [The Ocean Cleanup](https://oceancleanup.org/) and [Signal.org](https://signal.org/).

In a Nutshell – Kurzgesagt

I'm an entrepreneurial IT executive with a deep rooted passion for technology. I love to build and run tech, infra and teams. With over 25 years' experience - I'm able to put my hand to just about anything within the IT space, and perform most roles. In the last decade I've been working as a hands-on leader in the Pay and FinTech sectors - typically in CTO or SVP roles. I've operated platforms with millions of customers and billions of euros in revenue and from a tech perspective I have been directly responsible for the flow of money, data security and conformity with compliance standards. I receive regular invites as a digital transformation mastermind or architectural adviser to C-Level / Board / ExCo etc. The teams and infrastructure I build aim for 100% uptime – to deliver competitive, innovative and profitable solutions. In addition, they are protected against financial and cybercrime. I'm careful to maintain my ability to be hands on with the tools and code relevant to my teams and projects. One of my techniques to achieve this is through practice and R&D in my home-lab and experiments with the latest cloud infrastructure. You can find my Linked-In profile [here](#), and a detailed overview of the projects I have worked and delivered [here](#).

Going into detail

"Planet scale" Internet systems and operations is an area I've come to specialise in. This has taken me around the world and provided me with fantastic perspective and experience in my field, not only in technology, but importantly in culture and ethics too.

When leading, I strive to create and foster environments where people can find purpose, leverage and master their talents, and enjoy what they do. I try to help people form a mind-set where they can start their working day focused and motivated.

In my experience this approach positively increases daily key human metrics like motivation, happiness, and satisfaction – there are so many things benefit from this, especially productivity, creativity and project outcomes. These benefits often translate into organisations being more competitive, efficient, innovative and profitable.

Human RAID and enough slack are crucial ingredients in healthy teams. In tech terms, just as we do for mission critical systems - I aim to keep teams load balanced with enough spare capacity and redundancy to handle surges and outages.

My Rapid Application Development and Deployment (RADD) approach is continually evolving, which incorporates patterns, processes, infrastructures, frameworks, toolsets, testing techniques and other valuable learning I have acquired over the years. With this approach I can enable teams and projects to be fast and successful at delivering results and reacting to business challenges and demands.

I've delivered many projects to production. Typically with software, architectures, teams and their run books designed for high performance and high availability. The requirement is often the ability to process high TPS/RPS traffic loads, detect, alert, and recover from failure with minimal human interaction.

The many brilliant colleagues I have worked with have helped me evolve and I really enjoy paying this forward. Much credit goes to my early life and support network. I am very grateful for the people and the path behind me and I'm always excited to see where the path will lead next.

Skills & Experience

- 25+ years of commercial IT/IS experience, expert computer literacy and problem solving.
- 15 years hands on as a CTO / SVP / Director / IT team leader.
- 10+ years in the payments industry, technical and executive operation of financial web applications, Payment Service Providers (PSP's), Payment Acquisition Platforms (Acquirers) and Payment Orchestration services.
- 6 years in the online gaming and gambling industry, including MASON.com and FullTiltPoker.com.
- 25+ year's professional programming, platform-diverse, object orientated, portable, testable, and version controlled code.
- Multi-role capable: Solution, System or Enterprise architect, SysOp+SRE, NetOp, DevOp, DBA und DRE.
- "Planet scale" architectures and solutions supporting 120k+ concurrent users and billions in annual turnover. I intimately know the challenges and solutions for building and running distributed, performant and highly available information systems. Including the required programming, protocols, patterns, architectures, observability, and automation.
- Technical expert in financial crime prevention within the payments industry - monitoring systems and data transport and transformation. Implementation of industry leading solutions like Featurespace ARIC and bespoke alternatives.
- Rapid Application Development and Deployment (RADD) approach, which includes, patterns, processes, infrastructures, frameworks, toolsets and testing techniques to create and manage delivery pipelines.
- Storage systems workload expert – tuning workloads and architectures to reach their IOPS and throughput goals.
- Ceph expert: proxmox clustered deployments and cloud native multi-AZ [Rook](#) deployments.
- ZFS expert: stripped mirrors, multi-site dataset replication, workload tuning, slog, sanoid and synciod.
- Implementing on-premise infrastructure from scratch, and the same for Azure and AWS cloud platforms.
- Build+Run+Migrate on-premise, cloud and hybrid infrastructure and services.
- Build+Run solution and enterprise architecture for ecommerce, payment processing, payment acquisition, bookings, accounting and remittance software.
- Building automated and manual release management processes for geo-diverse infrastructures and services.
- Cloud practitioner – Infrastructure-as-Code-first – I've hands on experience in bootstrapping and maintaining PCI Level 1 compliant Kubernetes (kOps), utilising linkerd or istio service mesh spanning 3 availability zones (AZ's) in AWS. IaC configuration, building and deployment of containers (helm, GitHub Actions, and kubectl). For containers: Kafka, Druid, Superset, Turnilo, Apache, fastapi services, redis, sharded mongoDB, Grafana+Loki+Thanos observability stack, KeyCloak + OAuth2 Proxy for IDM and authentication. Deployed FreeIPA for k8s hosts HBAC – kOps node enrolment automated via CloudFormation.
- Proficient with cloud networking and packet filtering topics including eBPF-based Networking, Observability, and Security.
- AWS expert – managed and unmanaged Kubernetes clusters. VPC's, Certificate Manager, CloudFormation, CloudTrail, CloudWatch, ELB, NLB, IAM and policy mgmt., KMS, Network Firewall, RDS – Postgre, Route53, S3, Secrets, SES.
- Kubernetes expert – multi AZ deployments with auto scaling resources via kOps - Kubernetes Operations. Topics like: cilium, Controllers, Masters, Workers, Descheduler, External DNS and Secrets, Kube2IAM, RBAC, linkerd and istio service meshes, various ingress controllers.
- Azure intermediate – e.g. DEV, QA and PROD envs for a payment transaction orchestrator service, implementing microservices software architecture with .NET core. Involving a deployment of single AZ AD, managed Kubernetes, various managed services including redis and MongoDB and building and deploying the microservice containers.
- InfoSec / CISO: Implementation of security standards, methodologies and patterns, and employing industry standards and hybrid standards. Experience and awareness of "physical access" security aspects and possible defences.
- PCI Level 1 DSS practitioner. Lead and delivered 10+ PCI Level 1 audits on the PSP/merchant/acquirer side.

Programming skills, platforms, languages and experience

- Linux Guru (Debian advocate), Microsoft and Apple power user and system admin.
- Comfortable hacking and compiling software, kernels, firmware and drivers.
- Fluent in HTML, CSS, jQuery, PHP7, BASH, Perl 5, SQL, Python, JavaScript and TypeScript including node.js.
- Historically: fluent in Ruby & RoR, PHP4/5/6, AJAX, ASP, VB, ADO, CDO, COM.
- Expert use of JSON, XML, SOAP, protobuf and other data interchange formats.
- Thorough understanding of .NET architecture with commercial use of C# and ASP.NET, and more recently .NET core.
- NoSQL: Memcached, Redis clusters and MongoDB including multi-site sharding for improved application performance.
- Timeseries DB: Influx, Druid, Prometheus.
- Full understanding and creation of software cycles, related business roles, and the QA process.
- Test driven and automated development – beta, unit, functional, user, performance, disaster and chaos testing.
- Bug fixing, scrubbing, tracking. Familiar with productivity tools: Coda.io, Redmine, Bugzilla, Mingle and TestTrack Pro, Atlassian Family.

Leadership and Management

- In different settings – start-ups, small, medium and enterprise orgs with various management structures I've been able to gather a lot of experience in managing People, Process, Politics and Technology (PPPT). This experience has taught me that a balanced approach of PPPT delivers better overall outcomes.
- Pragmatic approach to programming and problem solving.
- Promoter of efficient time management and backlog prioritisation.
- Training team members to reduce distractions, focus on their objective and maximise their time "in the flow".
- Implementer of proactive and preventative support and maintenance, rather than reactive.
- Training staff to strategically apply VIP concierge style service to win customers trust and appreciation.
- Implementation of project management and ticket/backlog systems to track, coordinate and monitor projects and workload, and capture knowledge. Provides the ability to delivery regular and/or automated management reporting.
- Team development, personal development, capturing and applying staff initiatives, celebrating success, retrospectives - learning from mistakes, goal setting, on the job training, knowledge capture and transfer (docs + screencasts), opening minds to different approaches and technologies, absorbing feedback and applying it.
- Monitoring of staff engagement, happiness, and motivation levels – aiming to be proactive on any issues.

Employment History

June 2021 – Sept 2022

Nets Group – Full-time

Frankfurt, Germany

SVP Technology & CTO Digital Services (MS Ecom)

Internalised after 2 years consulting – invited by the CEO MS Ecom and CEO Digital Services to join as an SVP/CTO.

- Continuation of my previous duties and responsibilities.
- Technical management and operation of multiple platforms, digital services payment processing and orchestration, risk management and data intelligence and delivery.

Oct 2020 – May 2021

Nets Group – External

Denmark

iCTO Digital Services (MS Ecom)

Transitioning into a formal iCTO role for Nets MS Ecom's "Digital Services" division. The division provides payment processing and related services to higher risk merchants selling digital goods and services.

A to Z technical responsibility for the platforms, tech teams and systems that run the division. The platforms include:

- Digital SmartHub (DSH) - A merchant facing payment processing frontend orchestration and aggregation platform tailored to the digital goods and services segment. PCI L1. The DSH was started in '20 and implements a state-of-the-art software architecture hosted on Azure.
- PE - a legacy PSP platform utilised by the SmartHub as a conduit to legacy mainframe payment infrastructures hosted on-prem in Frankfurt. PCI L1.
- Featurespace ARIC Fraud Hub hosted on a multi-dc on-prem architecture in Norway. PCI L1. Consumes data from the core systems and provides risk monitoring for billions of transactions across the MS portfolio. Critical in maintaining regional and European financial compliance requirements by monitoring transactions and performing anti-money laundering activities.
- Nets MS Risk Mgmt. BI platform - hosted on multi-zone AWS infrastructure with a self-operated kubernetes cluster. Consumes data from the ARIC Fraud Hub to provide ad-hoc and scheduled historical reporting, monitoring dashboards and data exploration tools.
- These platforms contribute significantly to the net revenue of the Nets MS business unit, and facilitate growth in high margin merchant segments. They also protect licences to operate by conforming to financial regulatory requirements.

May 2019 – Oct 2020

Nets Group – External

Denmark

Project CTO / PayTech Mastermind / Value Stream Leader

Nets shareholders Bain Capital asked me in early '19 to join the quest of transforming the legacy enterprise estate of Nets Group. I joined as one of the many brains working on this topic by invitation of the Nets Merchant Services CPO.

Nets is a big org with main offices and core systems running in Frankfurt, Oslo, Helsinki and Copenhagen, and has teams in ~20 locations across Europe.

I joined forces with two fellow PayTech consultants and the first order of business was to collaborate with the Nets EA team to collect existing artefacts and then we took a tour of the core teams and geographies to learn the story of the enterprise estate, documenting and diagramming as we went.

- Shadow the on-going MS Blueprint work, help where we could, and start to build knowledge and plans for the next level of detail required to execute the blueprint after the work had been completed and budgets unlocked.

- In June '19 I was asked by Nets MS CPO to take a tech leadership role for a project that was in trouble. This project was Nets on-prem implementation of Featurespace's flagship product ARIC Fraud Hub, which was to replace the incumbent legacy system.
- In December 2019 the ARIC production systems were turned on and started processing data in batch mode. The solution ran in dual-production-mode alongside the incumbent system until June '20. Today ARIC is the strategic platform monitoring billions of transactions.
- In 2020 Nets MS CPO asked me to provide interim leadership for the PROTECT value stream.

July 2013 – April 2019

Inatec Payment AG – Full-time

Frankfurt, Germany

Group CTO

- A to Z technical mgmt. and operational responsibility of PSP and Acquiring gateway with a multi-million euro monthly turnover. PCI L1. Principle members of the VISA and MasterCard payment schemes.
- Delivery and management of integrations to dozens of PSP's and acquirers with various payment methods, covering VISA & MasterCard brands, AMEX, Discovery, Diners, JCB, CUP, Neteller, Skrill, Giropay, Sofort, Ideal, Wires, BitCoin and co.
- Mgmt. and refactoring of one million line Perl 5 based payment gateway application. Codebase started in 1999 and it's still running well.
- Built and nurtured a world class multi-disciplined, multi-cultural DevOps team to meet the IT demands of the organisation.
- Hiring and HR for IT, scouting and filling of positions on a conservative budget, heavily leveraging LinkedIn and business network.
- Introduced agile methods and created the ScrumMaster position which was internally filled after certified training.
- Responsible for IT Budget, vendor selection and management etc.
- Introduced rapid weekly release cycle (>50 yearly), everything ready on Friday goes on the following Monday.
- Implementation of DEV → PRE PROD → PROD workflow for all changes and projects supported by git-flow and Jenkins. Heavily utilised Debian package management system for consistent delivery across environments.
- DBA: On demand - full time DBA, full stack from install up to performance tuning. Sybase ASE and Repserver 15.x.
- SysOps: On demand - full time SysOp, full stack from install to maintenance and monitoring. Homogenous puppet setup.
- NetOps: On demand - management and maintenance of all networking equipment including corporate and production.
- Rollout of new firewall cluster, migrating from Juniper cluster to Fortigate 100D cluster. No downtime.
- Design and implementation of redundant IPVS (IP Virtual Server) load balancers on dedicated hosts.
- Implementation of Yubikey Two-Factor authentication for all sensitive systems.
- Implementation of self-service domain registrar and utilisation of the UltraDNS network to guarantee DNS reliability.
- Re-architected the production systems to be homogenous horizontal scaling and capable of being multi-site active-active.
- Rebuilt and refreshed EOL hardware production and pre-production systems with massive performance and capacity boosts on a conservative budget. At least double the performance and capacity, and half the space and half the heat.
- Provisioned a reverse proxy style DDoS protection platform with protection up to 100 Gbps attack.
- Delivery of six PCI Level 1 DSS Audits (customer side).
- Refactored and refreshed key areas of the infrastructure and applications, creating reliability and capacity.
- mPOS card present integration to Omnipay (FirstData Group) utilising ISO 8583. Including HSM set up and management.
- Technical delivery and management of card not present integration to Omipay.
- Architected and wrote a PCI L1 RESTful cryptographic cluster to centralise encryption topics and reduce sensitive data scope.
- Introduced project management and ticketing system for tracking of backlogs, and internal and external customer work.
- Technical sales support and presentations, and technical portion of customer boarding to the platform.

April 1998 – Current

Self Employed – Founder/Director

Worldwide

IT Consultancy – Founder / CEO / Principal Consultant

Global Computing (GC) was founded back in '98 in the UK, as I took my first steps in the business world, providing professional technical consultancy services and solutions for local customers.

As I have resided in Germany since 2011, I created FTC as my German company - also mitigation against Brexit.

Through GC and FTC I have delivered my services across Europe, North America, parts of Asia and the Middle East.

- Consultation on Solution, System and Enterprise architecture.
- Interim roles: iCTO, Architect, NetOp, DevOp, SysOp, DBA etc.
- Technical IT consultation and mentoring for start-ups and projects. Implementation of Agile and Rapid development.
- Past clients: Nets Group (via Bain Capital), Promar Intl., Cogim S.p.A., Elystan Capital GmbH, Qorvis Communications, GameOn Ltd (GameGrin) and various start-ups.

Oct 2012 – Dec 2012	Rational FT Services – Consultant	Dublin, Ireland
Full Tilt Poker platform re-launch - Linux Infrastructure and SCM		
I assisted the in-house team in the re-launch project of the Full Tilt Poker platform.		
Jan 2012 – June 2013	MyAdminSorted – Consultant	London, UK
iCTO / iCDO - Startup		
A to Z technical delivery of all aspects of a new startup venture. Taking a proof of concept codebase and turning it into a next-gen scalable online platform.		
July 2008 – March 2011	Pocket Kings Ltd	Dublin, Ireland
Web Cashier team lead and architect (Promotion)		
<ul style="list-style-type: none"> Responsible for the technical operation of the web-casher and software development, managing a team of 8-10 developers. Millions of customers worldwide, over 120,000 concurrent users in the production environment. Responsible for technical cash flow (billions in annual revenue), overall code quality, team HR decisions, team deliverables and production systems. 		
July 2007 – July 2008	Pocket Kings Ltd	Dublin, Ireland
Lead web cashier programmer and web framework architect		
<ul style="list-style-type: none"> Specialising in development of the web cashier component of Full Tilt Poker. Web cashier utilises highly advanced bespoke PHP5 framework, expediting the extension, configuration and maintenance of the cashier application. 		
Feb 2007 – June 2007	MANSION.com	Spain/Gibraltar
Portal Systems Manager/Architect – MANSION.com (Promotion)		
<ul style="list-style-type: none"> Co-management of multi-platform enterprise scale web portals .NET/LAMP/J2EE. Management of team consisting of web-mastery, CRM and SEO roles. 		
Oct 2005 – Jan 2007	MANSION.com	Spain/Gibraltar
Global Webmaster/Architect – MANSION.com		
<ul style="list-style-type: none"> Co-management of multi-platform platform enterprise scale web portals .NET/PHP. Scheduled and non-scheduled content/deployments, improvements and hot-fixes. Technical, hands on implementation and maintenance of SEO strategies. Website and database performance monitoring and performance improvements. 		
June – Sept 2004	Cogim S.p.A.	Iraq/Italy/Jordan
IS/IT Consultancy – Cogim S.p.A – Freelance		
<ul style="list-style-type: none"> Undertook study of IS/IT infrastructure to document and provide solutions to IS/IT business and communication problems. Reduced the company's operational expenses. Especially by reducing GSM call minutes in war zones and Middle Eastern countries. I helped to choose local providers for the implementation of VSAT Internet uplinks, which enabled staff to make data calls rather than GSM. 		
May 2003 – May 2004	Scan Computers Intl.	Bolton, UK
Webmaster, Programming, Sys-Admin and Support		
Based in Bolton scan.co.uk was then and still is one of the largest distributors of PC hardware and peripherals in Europe. In Germany it would be comparable to Alternate, Mindfactory or CaseKing. Scan is also a very professional and competent PC and server system builder.		
<ul style="list-style-type: none"> Junior SysOp and NetOp for the Microsoft portion of network operation centre. Performing maintenance, analysis and enchantments for DB and web servers that ran the business ERP system and websites. Small projects - programming leader reporting directly to the business owners. Assisted in the delivery of feature rich new look and feel website in ASP.NET. Developed and introduced a customer facing knowledge base and Q&A system for products on the website. Staff and customers could contribute to helping each other with product questions, knowledge and details. Assisted in the development and delivery of a website robot for scraping market pricing and stock information. The data was integrated into the ERP, stock and pricing systems to provide business intelligence and aid decision making. 		

Jan 2001 - Jan 2003

Promar Intl. / Genus Plc

Crewe, UK

Intranet Programmer – Consultant

- Enterprise level web application architecture and implementation for an Intranet and knowledge management system. Implementing using Microsoft ASP, HTML, and JavaScript.
 - Development and implementation of requirements, and change management process for the system.
 - Enrolled beta/user testers to enable an agile change delivery life-cycle, release often, fail fast and improve. Successful changes on the beta were taken into the production.
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Feb 2000 – 2005

Webmaster – Freelance

- Webmaster for various online PC computer gaming industry sites.
 - Maintaining high quality content to drive traffic, ad revenue and increase online real estate etc.
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Nov 1999 - Feb 2000

Delta Comtech Ltd

Macclesfield, UK

Junior IT Generalist, Webmaster & VISP Administrator

I was offered an apprenticeship at a local firm who provided IT support and facilities management.

- Administration of a VISP (Virtual Internet Service Provider) which was white-labelled to customers. Today you might compare as an early form of platform-as-a-service (PaaS).
 - Basic technical support for customers and triage of incoming support calls and emails.
 - Assisted in the implementation of LAN networks for customers, cabling, patching and co.
 - Assisted in the installation and provisioning of Microsoft Server and Exchange systems.
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Education

1999 – 2000

Delta Comtech Ltd

Macclesfield, UK

- Apprenticeship training in hardware, networking, systems implementation, system analysis, Sage and Microsoft systems.
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1998 – 1999

South Cheshire College

Crewe, UK

- Advanced GNVQ in Business & Computing.
 - Passed Computer Literacy Course – Clait.
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1993 – 1998

Sandbach School

Sandbach, UK

- GCSE's in Physics (C), Chemistry (C) and Biology (C), English (C), Maths, Information Technology (B), Physical Education (B), Geography, German, Religious Studies and Food Technology.
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Interests

- The Internet, reddit, Longboarding, computing soft/hardware, gaming, rugby, basketball, fast cars, and archery.
 - Current personal studies include Android & iOS development, storage and file systems and various NetSec topics.
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Name: **Kyle Milnes**

DOB: **1982**

Marital Status: **Married**

Gender: **Male**
