Todd Muscat **714 392-3745** rtoddmuscat@gmail.com

SUMMARY

- Deliver large technical products & architectures in major Healthcare, Financial Services and Aerospace Manufacturing verticals; develop SDLC, alignment and technical best practices, while staying 'plugged in' to the business.
- Agile software development and integrations; Platform, Framework and API Creation; paradigm and conceptual/ data model development; DevOps/ AI/ML; IoT & Mobile. .NET/ C#/ MSSQL/ jQuery UI/UX (Angular, React, Vue, Blazor).
- Background in FinTech, Predictive Medical & EDI, Aerospace, 3D Motion Control & sensing, Automation & Robotics (Real-time telemetry, embedded, CAD/CAM/ CNC).
- OOP, Domain & Test-Driven Development, Agile/ SCRUM SDLC Methodologies, vendor management, service contract negotiation, integration architectures, offshore team management, software development management, team selection, mentoring, code review, CD/CI, Configuration as Code, Containerization (Docker/Kubernetes). Coaching & technical debt management.

EDUCATION

Bachelor of Science in Physics, UCLA.

EXPERIENCE

Global Virtual Networks **Aug 2024 to Present**

Principal AI Researcher & LightStruc Developer, Architect and Director

- Develop agentic coding workflows using the Visual Studio Code extension framework.
- Research mechanistic interpretability in major large language models (LLMs).
- Develop instrumentation, UX, harnesses, and backend services for LightStruc AI.

iPerformX, Inc. [7-month DoD contract] Feb **2024 to Aug 2024**

Senior Software Architect & FDM Aerodynamicist

- Developed novel Flight Simulator using C++, JSBSim API and Unreal Engine.
- Built flight dynamic models for Military Aircraft (T-45, T6, T38 and others).
- Built synch strategies in multi-aircraft mission scenarios for student trainer modules.
- Worked with creative and UX teams to render very realistic flight dynamics and scenery to the screen.

HID Global, Long Beach, CA **Aug 2021 to Jun 2022**

Director of Software Development

- Manage software and firmware development teams for world's largest physical access controller deployment. Responsible for design and delivery of all aspects of device software including embedded SW, drivers, UX and test tooling.
- Led hardware 're-spin' for 3 major Microcontroller architectures (from Atmel to Renesas, NXP, STMicro). C++ re-writes and porting. Wireless, I2C, SPI and NIC/Phy device interfaces for new targets.
- Hands on with code review/refactoring and architecture, set up continuous integration and deployment using Jenkins and Azure DevOps pipelines.
- Responsible for software feature portfolio management and iteration planning to ensure business market goals.
- Liaise with hardware designers and engineering to ensure security, compliance and HW/Electrical function.
- Liaise with QA/Test to ensure designed criteria success for quality (SonarQube) and security, UL and industry standards compliance.
- Device interconnects include: I2C, USB, RS-485/232, Wi-Fi, BLE, Apple Wallet; operating on RTOS, Linux Host & Bus (MQTT).
- Report to Vice President ensuring roadmap & development operate on budget. Lead team culture in global effort (US, UK, South Africa).

Consulting Assignments **May 2019 to Present**

- **EntelMed,** May 2020 to Present: Developing IoT biomedical sensor & tele-conferencing solutions in healthcare. biometric telemetry platform, Mobile UX, Heartrate/PO2 & Glucose monitoring. AI/ML (Azure Cognitive). Node.js and postback-free FWs. Human features classifier and AI feature design (Python/ R). Led developers in startup working on healthcare patient system. Xamarin & native droid/ iOS. Azure DevOps. Azure Cognitive training and AI Feature DB design.
- **Ephesoft,** (4 months as FTE, Sr Dir Development): Designed AI machine learning modules for handwriting recognition, form recognition and AI/ML products using C#/ .NET, Postgress & MSSQL, Typescript, JavaScript/Angular, HTML5. Deployed in Docker. Used Atlassian/Jira and Swagger. Managed in-house & India offshore devs, PMs.
- **Edwards Life Science** (3-month contract): **Designed** integration process for ERP & Salesforce data into Healthcare Practitioner and product inventory system. Managed offshore team of 4. Designed API and UX for Edwards' HCP system using Angular on ASP WS.

Essentium Inc., Irvine, CA **Aug 2018 to Apr 2019**

Head of Software Engineering,

- Managed software and firmware development teams for 3D Printer machines. Responsible for overall design & Imp.
- Responsible for software department architectural vision and execution; led enterprise software development, IoT/Telemetry on machine and in Azure/AWS Cloud. Device interconnect (I2C, CAN, USB, RS-485, Wifi, BLE), RTOS & Bus (MQTT, Mesh).
- Ensured team execution of motion control algorithms, electro-mechanical interfaces and API construction, UX & visualization, analytics, device telemetry in multi-message environment.
- Led software roadmap, development, and project team management life cycle and communications to C-Suite/ Investors. UL and manufacturing industry standards compliance.

Tallán (Div of ey.com/consulting 5X MS Gold Certified Partner), Santa Ana, CA **Feb 2015 to Aug 2018**

Senior Technical Manager (Mar 2015 to Aug 2018)

- Managed technical delivery of $47M EDI project (client: IEHP with M1.2 lives managed). Ensured HIPAA compliance.
- Responsible for all schedules, planning, architecture POC, testing, delivery & deployment of $21M healthcare system.
- Drafted pre-engagement and SOW contracts and responsible for project P&Ls, and technical Architecture.
- Led Azure Practice for Tallan West Coast, senior manager training and college recruiting & candidate screening.
- Re-engineered medical billing/ EDI pipeline for ASCX12 837 claim/ encounter transactions. Liaised with stakeholders & C-level management. Tech implementations for HIPPA compliance/ regulatory to CMS/DHCS and in-flight/at-rest security.

Sr. Architect (Feb 2015 to Mar 2015)

- Wrote BizTalk EDI code for healthcare transactional systems. Designed SaaS medical Claim APIs & Databases.

United Healthcare, Irvine, CA **July 2012 to Nov 2012**

Application Development Manager

- Led 70-member team of FTE & offshore architects, developers, analysts, and designers on patient records, workflow, and analytics software.
- Responsible for all application development deliverables, developed applications for patient care apps.
- Analyzed and assessed initiatives and cloud-readiness (SaaS, PaaS & IaaS) in Azure environment. Led SharePoint, Biztalk, Cognos and other middleware integrations.
- Identified strategies and technical solutions to achieve the business vision and presented findings to the executive team.
- Worked with developers and architects at the App/Solution architecture level, and technology/tool selection to establish style, coding standards and security best-practice.

Slalom Consulting, Los Angeles, CA **Apr 2012 to July 2012**

- **United Healthcare**: Completed 10-week assignment then hired on full time at UHG/Optum.
  - Led team of architects, developers, analysts, and designers on patient records, workflow, and analytics software.
  - Analyzed and assessed "Cloud Readiness", and integrated Monarch Healthcare with United Healthcare Group.
  - Worked closely with client SMEs, analyzed current state and provided future-state recommendations.
  - Identified strategic and technical solutions for business continuity. Architected Azure/ .NET Cloud approach.
- **United Grocers: Completed** a 10-week assignment. Worked closely with legacy teams, created WCF Services layer for grocery logistical inventory management using MS technology stack (.NET 4.x).
- **Slalom Practice:** Assisted Slalom management in recruiting and team training & mentorship

LPS/ LSI, Irvine, CA **Oct 2010 to Apr 2011**

Senior Architect

- Created Rest-Full & WCF/ Win Services-based ESB system for 3rd-party loan service provider.

USRES, Inc., Lake Forest, CA **Mar 2010 to Sep 2010**

Director of .NET Development

- Responsible for technology design, engineering, maintenance, and management of new and legacy systems.
- Managed, led, and architected new .NET development, including large Web Services integration with One West Bank.

Arch Bay Capital, LLC., Irvine, CA **Feb 2009 to Mar 2010**

Asst. Vice President, Application Development

- Responsible for the design, engineering, operations, maintenance, support and management of major technology platform.
- Architected and implemented services-driven whole loan asset management platform.
- Managed teams of developers, designers, managers & analysts.
- Liaised with major financial services & lending industry counterparts in multi-$100M integrations & SaaS initiatives.
- Led HAFA/HAMP tools implementation/decision support and re-securitization of assets exceeding $650M.
- Hosted software demonstrations and directly won business partnering with Citibank, Wells Fargo, Chase, York Capital, and the FTC & UC Reagents; with multi- $100Ms new mortgage asset management business.

Nations Direct Title Insurance Services, Anaheim, CA **Jun 2004 to Sep 2008**

Director of IS & Principal Architect

- Responsible for all aspects of enterprise software development; identified key technology strategies, delivered innovative Customer Service, business activity monitoring and workflow management software, automating the signing of mortgage instruments, nationally.
- Created ground-breaking geographic appointment scheduling system API (like *Uber* for loan singings); built all supporting applications.
- 100k edge-to-edge system message transactions representing over 350 loan closings per day.
- Led major enterprise integrations with Quicken Loans, Ditech/GMAC and others via EAI/ API/ Webservices.

Computer Business Support, Yorba Linda, CA **Mar 2002 to Present**

Principal / Independent Consultant

- Consulted with clients identifying business needs, conducting analysis, proofing architectures, then building solutions.
- Built real-time ERP-integrated technology platforms, data mining/ warehousing & analytics tools.

Tallán (Div of ey.com/consulting 5X MS Gold Certified Partner**),** Irvine, CA **Jul 2000 to Feb 2002**

Senior Project Manager

- Managed all aspects of professional services engagements from initial stakeholder/business needs analysis, project planning & architecting to team selection, mentoring and management; advised during pre-engagement and SOW contracts phase.
- Led Proof of Concept for supply chain solutions & supply chain middleware (Rosetta Net & Ariba).
- Built NetApp team from 5 to 17 Tallan consultants (Architects, Devs, Digital Artists & PMs).

HomeSpace.com (Now **LendingTree.com),** Pasadena, CA. **Dec 1999 to Jul 2000**

Director, Internet Programming

- Architected, designed, and directed pioneering development for Mortgage/ Financial Services applications.
- Researched/ championed (then novel) SOA Standards initiatives in on-line mortgage/IT space.

Precision N/C, Inc., Huntington Beach, CA. **Feb 1984 to Dec 1999**

Vice President of Engineering

- **US Dept. of Defense /Boeing Aircraft contract:** Developed software for high-precision CNC aerospace automation products.
- **Ford Aerospace contract:** Wrote 3D Visualization & device drivers, RS-232 protocol adapters for Plotters in robotic simulation.

Engineer

- Wrote machine motion control, driver firmware, Post Processors & UX to interface 5-Axis machine tools in C and Fortran. Managed developers/engineers.