

Daniel Vargas



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<https://github.com/danvargg>

Summary

Daniel is a results-driven professional with over 16 years of diverse experience in continuous improvement, business systems analysis, and cutting-edge technologies including machine learning, deep learning, computer vision, and natural language processing. Adept at leveraging advanced data analytics to drive operational excellence and streamline processes across multiple industries, including neuroscience, medical devices, aerospace, railways, consulting, and consumer products. Demonstrated track record of delivering innovative solutions, optimizing business performance, and enhancing customer experiences. Proven ability to lead cross-functional teams, identify opportunities for growth, and implement strategic initiatives.

Areas of Expertise:

- Artificial Intelligence
- Continuous Improvement
- Business Systems Analysis
- Machine Learning and Deep Learning
- Computer Vision
- Natural Language Processing (NLP)
- Machine Learning Operations (MLOPs)
- Data Analytics
- Statistical Modeling

Experience



Director, AI Development

Innodem Neurosciences

Feb 2021 - Apr 2023 (2 years 3 months)

- Conducted code refactoring (Python) to improve overall codebase quality, readability, accessibility and maintainability, ensuring PEP-8 and OOP practices in the process
- Implemented comprehensive unit tests for the development and production deep learning pipelines, ensuring 80% code coverage on over 350 features
- Ensured compliance with Software of Unknown Provenance (SOUP) regulations, ensuring that all software components used in the system were adequately evaluated for quality and security
- Ensured compliance with electronic personal health information (ePHI) privacy and security regulations: HIPAA, PIPEDA, and GDPR
- Lead the SCRUM process, facilitating daily stand-ups, sprint planning, retrospective meetings, and ensuring that the team is adhering to agile principles and best practices
- Conducted code reviews, ensuring that code quality standards were met and that the codebase is maintainable and scalable
- Managed priorities, ensuring that the team is working on the most critical and impactful features for the business
- Completed federal government R&D grant documents, securing funding for the project and ensuring that all documentation requirements were met
- Developed efficient CI/CD pipelines for development and production deep learning pipelines

- Ensured trained models usage of Apple Neural Engine (ANE) for real-time inference on-device



Data Science Consultant

Master Data Analysis

Sep 2020 - Mar 2023 (2 years 7 months)

- Developed and facilitated a comprehensive data science training program for a team of 9 data analysts, covering topics ranging from data extraction to model deployment, resulting in a significant increase in team members' technical proficiency and ability to deliver results
- Coached and mentored data science projects, providing guidance and expert advice to ensure that business results were achieved
- Developed all program materials, including code, presentations, assignments, and projects, resulting in a cohesive and effective training program that met the needs of the team and the organization
- Setup and managed Azure infrastructure for facilitation sessions and projects execution



Deep Learning Engineer

Innodem Neurosciences

Feb 2019 - Jan 2021 (2 years)

- Trained and improved neural network (CNN) models for eye-tracking applications (Tensorflow, Scikit-Learn, and XGBoost)
- Created and operationalized the end-to-end deep learning pipeline that covers data engineering and processing, model building, model training and evaluation, and model deployment
- Developed and implemented model deployment capabilities (MLOps) for both on-server (ONNX, TFLite) and on-the-edge (CoreML, iOS) scenarios, also reducing model deployment cycle time from hours to minutes
- Reduced deployed models' latency through quantization and pruning, achieving real-time (60 FPS) eye gaze predictions on-device, without losing precision
- Designed and implemented the core neural network (ResNet) architecture and training pipeline for diagnostics applications
- Designed and implemented neural network experiments tracking (Weights & Biases) to make informed decisions based on data
- Developed on-device model fine-tuning (transfer learning under 5 seconds) code to enable personalized predictions for individual users
- Reduced model training pipeline duration (~13%) using mixed precision and multi-GPU (distributed) training



Sr. Business Systems Analyst, Operational Technology

CN

Mar 2018 - Dec 2018 (10 months)

- Elicited, analyzed, and decomposed over 118 L1 business requirements (process and tools) from internal and external partners, within an agile and continuous delivery environment
- Acted as liaison between business and implementation teams
- Lead portion of the strategic roadmap defined by the Product Manager
- Performed process analyses and improvements backlog assessments (DMAIC, PMCS)
- Created and validated current and future-state processes and tools with business partners
- Developed a sentence similarity model (NLP) to decrease support requirements management, decreasing elicited requirements redundancy by 8%
- Shaped the requirements phase based on client dependencies and scope

- Analyzed, clarified and prioritized product requirements
- Created and validated the current and future-state processes with business partners



Project Management Lead, Electrical Systems and Fuel Inerting

BOMBARDIER

Jul 2017 - Mar 2018 (9 months)

Responsible for providing project management knowledge during the development of the electrical systems and fuel inerting of the CSeries commercial aircraft.

- Draft and Execute Project Mandate
- Mobilize different functions in order to achieve project deliverable
- Supported the team through the initiation, planning, execution, monitoring and control, and closure of the different aircraft development phases, handled under the change management process, to ensure completion within the scope, schedule, and budget established in the Statements of Work (SOW) and Product Change Requests (PCR)
- Coordinated technical integration activities with input from internal and external (supplier) stakeholders



Continuous Improvement Specialist (ITPLM)

BOMBARDIER

Aug 2014 - Jul 2017 (3 years)

- Coached and lead continuous improvement projects and workshops (VSM, visual management systems, kaizen, decision-based-schedules, knowledge diagrams, etc.):
- Identified root causes by performing formal technical problem-solving and root-cause analysis
- Software interface definition documents (IDD) for aircraft builds: review and approval lead time reduction from 40 to 30 days, rework rate reduced from 33% to 7%
- Structures dataset release process: first time right rate from 13% to 71%, lead time reduced from 26 days to 19 days
- Aircraft serialization process: discrepancies from 50% to 0%, ASL 24hr generation turnaround, total manual operations reduced from 111 to 57
- Engineering documentation data correction and migration: integrated execution plan that manages dependencies between projects and systems
- Outsourcing engineering services lead time from 186 to 50 days
- Maturity process design for aircraft loads loop
- Machine learning model to predict most critical load cases from external loads in conceptual design
- Technical publication development process: lead time reduced from 103 to 10 days, first time right rate from 50% to 91%
- In-Service customer issues process: lead time reduced from 290 to 170 days
- NLP model to identify the top sources of change in PCR process



Lean Six Sigma Black Belt Consultant

QualityGB

Jul 2012 - Dec 2012 (6 months)

- Coached and mentored 16 Lean Six Sigma Black Belt projects in 2 nationwide industrial parks, which resulted in \$1M+ in operational savings
- Worked directly with clients to ensure expectations and objectives were met
- Developed and facilitated a comprehensive lean six sigma black belt training program

- Developed all program materials, including code, presentations, assignments, and projects, resulting in a cohesive and effective training program that met the needs of the team and the organization
- Consulting, mentoring and coaching 21 Lean Six Sigma Black Belt projects in two nationwide industrial parks (medical devices, electrical/electronic devices, packaging); for USD\$1M+ in yearly savings for 9 companies
- Develop Six Sigma Black Belt and Green Belt Certification training material
- Lead, facilitate, train, coach and mentor 21 Lean Six Sigma Black Belts in their assigned improvement projects
- Field consultant for Lean Manufacturing implementation project (score from 0.75 to 4.0 in 16 weeks)
- Working directly with clients to ensure expectations and objectives are met and guidelines are followed

Technical Assurance & Validation Engineer II

Johnson & Johnson

Nov 2010 - Jul 2012 (1 year 9 months)

- Lead major product primary packaging re-design to address transportation issues. New injection mold design, test methods development and validation, transportation testing and validation
- Establishment of Site Validation Master Plan (VMP) and implementation of new validation procedures and approaches for computerized systems, equipment / process, products, cleaning, facilities / utilities and test methods
- Designed and conducted 60+ design of experiments (DOE) to define / improve processes parameters, controls, and limits
- Planned and executed 80+ validations and revalidations focused on process improvement and corrective actions / preventive actions (CAPAs)
- Lead Major product packaging improvement (3 product lines) through researching and developing PET forming film: process and packaging specifications creation, process development and optimization, test methods development, and equipment tooling re-design. This allowed all 3 product lines to be packaged in the same equipment with the same parameters and the same tooling, reducing change over time by ~66% and material usage by 21%

Manufacturing Engineer

Jul 2009 - Nov 2010 (1 year 5 months)

- Successful manufacturing system transfer for: 7 steerable guide wires families (Medtronic CV), 2 ECG leads families (Bard Access Systems) and 3 cryogenic devices families (Cryocath). Transfers included: technologies transfer, product flow design, facilities layout, ERP systems modifications and population, supply chain design, procedures and specifications creation and implementation, test methods transfers and validations, and processes development, testing, and validation
- Lead project that yielded USD\$73K+ in yearly savings through tooling design and build (silicone coating equipment)
- Lead Lean Six Sigma project for USD\$31K+ on yearly savings and over a 2% throughput increase in sub-assemblies manufacturing (destructive test sampling reduction)
- Sub-assemblies area re-layout for 23%+ reduction in overall production floor utilization
- Product identification system (visual factory) creation
- USD\$10K+ in yearly savings for grinding operations improvement
- Developed and facilitated engineering training program data analysis and world-class manufacturing

Process Engineering Supervisor

Andin International

Jun 2008 - Apr 2009 (11 months)

- Lead project for diamonds usage (11%), improving precious stones life cycle and inventory management
- Modularization of the workshop-based production system while reducing 11%+ of the assembly space usage

Intermodal and Equipment Control Coordinator

A.P. Moller - Maersk

Jul 2007 - Jun 2008 (1 year)

- Lead the SAP deployment and implementation in the Caribbean cluster (Central America – Caribbean)
- USD\$78K+ yearly savings through inland transportation network re-design and corridors rearrangement
- USD\$40K+ yearly savings through empty equipment inventory management and optimization

Education



Udacity

Data Engineering Nanodegree, Data Engineering

Jan 2020 - Mar 2020



Udacity

Machine Learning Engineer Nanodegree, Machine Learning Engineering

Sep 2019 - Dec 2019



University of Ottawa

Master of Engineering (MEng), Engineering Management

2013 - 2014



Instituto Tecnológico de Santo Domingo

Bachelor of Engineering - BE, Industrial Engineering

2004 - 2008

Licenses & Certifications



Azure Data Scientist Associate - Microsoft

Issued Nov 2020 - Expires Nov 2022

H573-8605



Microsoft Professional Program in Artificial Intelligence - Microsoft

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Data Science Specialization - The Johns Hopkins University

SHWB7W8XWLSR



Applied Data Science with Python Specialization - University of Michigan

L6KWTP3MLEFB



Deep Learning Specialization - DeepLearning.AI

4NTLVXWK6A23



Natural Language Processing Specialization - DeepLearning.AI

AQVW73AZWRMT



Machine Learning Engineering for Production (MLOps) Specialization -

DeepLearning.AI

W5BXLJMFCA7V



Generative Adversarial Networks (GANs) Specialization - DeepLearning.AI

JJECMKXH7A9X



Certified Lean Six Sigma Black Belt (CLSSBB) - Six Sigma Development Group,
LLC