Manuel Gonzalez-Rivero

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Current Address
716 Scarburgh Way,
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Objective	An impactful position that takes advantage of my background in Machine Learning, Software Engineering, Product Development and Engineering Management.

Education

CARNEGIE MELLON UNIVERSITY, PITTSBURGH, PA
Masters of Science in Electrical and Computer Engineering — MAY 2009
Bachelor of Science in Electrical and Computer Engineering With College Honors — MAY 2008
    Overall GPA: 3.5/4.00

Experience

Maxar Technologies, DMV, Director of Public Sector Product Engineering, (Python, C++, VHLD/Verilog) — MAR 2023 Present
- Provide technical leadership for the creation of Full Stack technical architectures for enterprise scale products that span Multiple Domains (Machine Learning, Data Production, Application Layers,etc).
- Designed, built, and architected the technical roadmap for 5 Departments (Applied Machine Learning, DevOps/Information Security, Applications, Core Development, Operations and Maintenance) to build products that meet the needs of Maxar's public sector government customers.
- Created touchpoints between Product, Sales, Design, and Engineering organizations to drive efficiencies on internal and external investment, create technologies that are go-to-market ready, and drive bottom line return on investment. (Driving 100 Million + in contract capture/execution)
- Doubled down on previous AML mission to expand its scope and operating theory to a larger scale

Maxar Technologies, Herndon, VA, Director of Applied Machine Learning, (Python, C++,VHDL/Verilog) — JUL 2020 MAR 2023
- Provide technical leadership for the creation of Deep Learning/Computer Vision architectures for globally generalizable object detection, semantic segmentation and scene classification in a machine learning as a service (MLaaS) pipeline that operated on the Global Daily intake of satellite imagery.
- Designed, built, and architected the technical roadmap for a department of 4 teams (Machine Learning Engineering, MLOps, Data Science Services, and Application Layer) to capture and deliver against 48.3 million dollars of contracts for a government customer.
- Created a horizontal team to modernize Data Science workflows by gathering requirements for user personas, identifying critical use-cases, and building a critical path for feature implementation across the Applied Machine Learning department.

Orbital Insight, San Francisco CA, Lead Computer Vision Scientist, (Python) — OCT 2018- JUL 2020
- Developed globally scaled convolutional neural network architectures for scene classification, Object Detection, and semantic segmentation with a python/tensorflow stack.
- Led a multifunctional team of deep learning experts through sprint planning and people management while maintaining high degree of fluency in technical execution
- Developed AWS machine learning data pipeline for geospatial imagery

Planet Labs, San Francisco CA, Machine Learning Engineer, (Python) — FEB 2018- OCT 2018
- Developed convolutional neural network architectures (U-net/Resnet) for scene classification, feature extraction, and semantic segmentation with a python/tensorflow stack.
- Helped developed GCP machine learning data pipeline for geospatial imagery

Pennsylvania State University ARL, State College PA, Research Engineer <www.3dbabove.com>, Python — NOV 2012 FEB 2018
- Developed convolutional neural networks for automatic detection, estimation, and classification of structures of interest within GIS multi-spectral imagery using GPUs
- Developed active mask segmentation algorithms for the detection, classification, and signature generation of targets captured in short/long wave IR imagery
- Developed evaluation tool that made use of homogeneous k-fold analysis to compare performances of competing target tracking algorithms
- Developed image processing algorithms to operate on a power constrained system that could perform feature extraction, pose estimation, photo stitching, classification, and compression

Mango Engineering and Consulting LLC, Sunnyvale CA, Founder <www.3dbabove.com> — FEB 2012- PRESENT
- Developed dense signal environments for defense contractors
- Created bit and cycle accurate models used to test satellite FPGA payloads
- Worked on various projects that utilized hardware, mechanical, and software engineering capabilities

Brinton Engineering LLC, Menlo Park CA, Partner <www.brintonengineering.com> — FEB 2011- FEB 2012

- Co-Founded Brinton Engineering.
- Used a variety of skills ranging from hardware, PCB layout, firmware, programming and mechanical engineering to build products ranging from rocket avionics to high precision microscopy to toy industry electronics to ipad applications
- Developed products from coffee shop napkins to full production devices

General Dynamics, San Jose CA, Principal Engineer, (Verilog, VHDL)   AUG 2010- APR 2011
- Created satellite payload hardware, firmware, and FPGA code
- Analog Arbitrary waveform generation using MATLAB and Agilent hardware

Lockheed Martin, San Jose CA, Hardware Engineer, (Verilog, VHDL, Matlab)   JUN 2009- JUL 2010
- Developed image processing algorithms in MATLAB to correct for atmospheric disturbances
- Implemented algorithms on a Virtex 6 FPGA
- Created a complete signal synthesis environment to test communications systems
- Invented communication constellations for higher level modulation schemes

BBN Technologies Intern, Arlington VA. (Matlab)   JUN 2008- AUG 2008
- Created software to facilitate field testing of DSP hardware for a successful preliminary design review
- Rediscovered NDFT techniques to gain high resolution renderings of the DTFT
- Worked with vibrometry data to segment regions of interest

Teaching Assistant, Signals and Systems (18-396)   AUG 2007- DEC 2008
- Developed laboratory assignments through testing and providing critical feedback
- Created solutions bi-weekly for lab assignments and grade lab submission
- Held office hours to help students through difficult material

Publications

"Active Mask Segmentation For The Cell-Volume Computation Of HeLa Cell Images" 2008 (ISBI)
"Design of a Modular Snake Robot" 2007 (IROS)

Skills

Python, tensorflow, C/C++, ANTLR,MATLAB,CUDA,OpenCV, Altium, Git, Unix/Linux/Windows Dev