

LUIS BRACAMONTES

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EDUCATION

Master of science in Computer Science at University of Stuttgart **2014 – 2016**

Specializing in Autonomous Systems and Robotics at the institute of Machine Learning and Robotics – *Stuttgart, Germany*

Thesis: Image reconstruction from compressed sensing measurements using deep learning
Supervisor: Prof. Dr. rer. nat. Marc Toussaint

Bachelor of Electronics Engineering at Institute of Technology of Mexico **2006 – 2011**

Major in Instrumentation and Control – *Ciudad Guzman, Mexico*

Thesis: Design and implementation of a line-following car using the 32-bit Freescale microcontroller MPC5604B for 2010 Smart Car Race

WORK EXPERIENCE

Engineering Manager Applied CV Triplelift, Inc New York, NY

Feb 2023 - Current

- Lead and Manage a multidisciplinary team of software and computer vision engineers.
- Motivate the team to work incrementally in a strategic direction while keeping focus on continuous delivery and fast execution.
- Align product roadmaps with technical feasibility.
- Provide technical direction to junior team members.
- Guide and facilitate applied research activities for video analysis at scale and visual effects.
- Define strategy to develop POC's using computer vision and machine learning that show value of future innovative products.

Lead Machine Learning and CV Engineer Triplelift, Inc New York, NY

Oct 2021 - Jan 2023

- Leading the strategy and roadmap for Computer Vision applications in the context of Connected TV (CTV) for content delivered over-the-top (OTT).
- Train GAN's for image to image translation to realistically augment images with advertisement placements in a post-production setup.
- Use CLIP to analyze videos at scale so one can find meaningful context moments in videos that could serve as targeted placements.
- Develop and deploy a camera tracking system that creates 3D reconstructions of scenes from a sequence of images.
- Working closely with the HR department to augment our ML praxis and expand our CV capabilities.
- Defining product requirements along with our product team for future releases.

Senior Computer Vision Engineer Triplelift, Inc New York, NY

Oct 2019 - Sep 2021

- Trained and developed Deep Learning models using deepstream and architected a highly efficient pipeline for video analytics. This solution was presented at AWS re:invent 2020.
- Developed a semantic segmentation DL model for rotoscoping. This model was used as an automatic rotoscoping solution and integrated as a plug-in into Nuke for VFX.
- Implemented a solution for photogrammetry, camera calibration and 3D scene reconstruction.
- Defined Triplelift's CV strategy and managed product requirements for all projects.
- Proposed solutions for video analytics reinventing ad placement identifications and brand insertions. (3 patents pending)

- Tools: Python, C++, Opencv, Docker, Gstreamer, AWS, Azure, CUDA, Deepstream, COLMAP, OpenMVG.

Machine Learning Engineer, The Walt Disney Company, Orlando, FL *Oct 2017 - Sept 2019*

- Built a bird detection model for the Raspberry Pi using Embedded Learning Library in partnership with Microsoft Commercial Software Engineering.
<https://news.microsoft.com/transform/disneys-smart-birdhouses-reveal-the-secret-lives-of-purple-martins/>
- Managed end-to-end development of computer vision API that detects and classifies objects in stock to automate inventory replenishment (implemented in production in a Walt Disney World park).
<https://disneyparks.disney.go.com/blog/2019/10/find-your-happyplace-exploring-droid-depot-at-star-wars-galaxys-edge/>
- Designed and implemented a CV approach using ROS for detecting preference with a friendly privacy approach which resulted in a granted patent.
- Designed and developed proof of concepts for solving problems in theme parks using CV and ML.
- Architectures: Multi-threading, Event-driven, Service Oriented.
- Tools: Python, C++, Opencv, Dlib, Pytorch, TensorFlow, keras, Docker, Gstreamer, ROS, Qt, AWS, Azure, Flask, CUDA, Scikit-learn.

Deep Learning Engineer, Ksquare Inc., Dallas, TX *Jan 2017 – Sep 2017*

- Developed a CV-based people counting solution in the cloud and at the edge for business and retail analytics.
- Implemented and trained Deep Neural networks for face verification.
- Architectures: Cloud Computing, Services Oriented, Event-driven
- Tools: Python, Opencv, keras, Dlib, Scikit-learn, Caffe, darknet, TensorFlow, AWS, Jetson TX

Deep Learning Researcher, Sony European Center, Stuttgart, Germany *Feb 2016 – Sep 2016*

- Proposed and implemented a new Deep Neural Network capable of reconstructing images from compressed sensing measurements.
- Implemented and GPU solution for faster GPU matrix computations.
- Tools: Python, Pytorch, TensorFlow, Opencv, Matlab, OpenCL, CUDA.

Sr. SW Engineer, Freescale Semiconductor, Guadalajara, Mexico *Sep 2012 – Sep 2014*

- Designed and implemented made for iPod (MFi) software stack for Apple devices and Open Accessory Protocol (AOAP) for android devices. Including libraries for ARM (cortex m) architecture microcontrollers for a board support package (BSP).
- Architectures: OSI model, Multi-threading, Event-driven.
- Tools: C/C++, assembly, GBD, USB device, USB Audio, I2S, RS-232, I2C, RTOS, SPI, embedded device (ARM cortex).

Jr. SW Engineer in Test, Continental AG, Guadalajara, Mexico *Feb 2011 – Aug 2012*

- Implemented automated test cases for Electronic Control Units (ECU's) in the vehicle, including airbags and power train units
- Architectures: OSI model
- Tools: C, RTOS, CAN, RS-232, I2C, Vector CAN tools

PATENTS

- System and method for intelligently generating digital composites from user-provided graphics U.S. patent number 11,526,874

- Preference Implementation System for Acting on Preferences of Facility Visitors.
U.S. patent number 10,915,738
- System and method for preparing digital composites for incorporating into digital visual media.
U.S. patent number 11,301,715
- System and method for integrating realistic effects onto digital composites of digital visual media.
U.S. patent number 10,984,572

ACHIEVEMENTS

2017	Third place at the Data Challenge Week organized by Eindhoven University of Technology JADS department. S'herbogenbosh, Netherlands
2013	Selected by the Mexican Institute of Youth to participate in the Seminar about Youth, social media strategies and new technologies in Montevideo, Uruguay.
2010	Winner of the local stage to represent the university in the contest, "Smart Car Race 2010" organized by Freescale Semiconductor Guadalajara.
2009	Winner of the local stage of the National Creativity Contest and gaining the right to represent the Institute at the regional stage in La Piedad, Mexico with the project named "Automatic Positioning System for a Microwave Linkage".
2005	Selected as one of the twenty students from all over Mexico to participate in the Science Workshop for Young People organized by the National Institute of Astrophysics, Optics and Electronics (INAOE) in Tonantzintla, Mexico.

LANGUAGES

Spanish (native), English (TOEFL iBT 105/120), French