# Edgar Fabian Aguilar Calzadillas


## Contact

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## Social Networks

@fabianaguilarc
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## Skills

| | |
|---|---|
| Python | Image Processing |
| PyTorch | OpenCV |
| TensorFlow | Statistics |
| MATLAB | Pattern Recognition |

## Languages

| | |
|---|---|
| English | Fluent |
| Spanish | Fluent |
| French | Beginner |

## Profile

- Master of Applied Science in Aerospace Engineering
- M.A.Sc. Research on Vision Systems for Navigation of Autonomous Vehicles
- Machine Vision, Machine Learning and Deep Learning enthusiast
- Over four years of working experience in Automotive, Manufacturing and Automation industries
- Strong interpersonal skills such as leadership, critical and analytical thinking, goal oriented and delivery of results
- *Relevant experience in electrical and electro-mechanical design of medium voltage equipment*

## Education

**Master of Applied Science in Aerospace Engineering**
*Carleton University Ottawa, ON – Jan 2017 to Oct 2019*
- M.A.Sc. Thesis: "*Sparse Stereo Visual Odometry with Local Non-Linear Least-Squares Optimization for Navigation of Autonomous Vehicles*"
- Guest speaker at the Graduate Course "*Robotics*" (Winter 2019)

**Bachelor's in Sciences in Mechatronics Engineering**
*Universidad Autónoma de Nuevo León San Nicolas, NL, Mexico – Aug 2007 to Jun 2012*
- Specialization in "*Robotics and Biomedical Devices*"

## Certifications

- Deep Learning with Pytorch: Zero to GANs, (Jul 2020)
- AGI-STK – Level 1, (Feb 2017)

## Working Experience

**Teaching Assistant** – *Jan 2017 to Apr 2019*
*Carleton University, Ottawa, ON*
- Appointed as adviser and tutor for the "*Capstone Project for Engineering – Integrated Autonomous Vehicle"* (Winter 2019)
- Guided students on machine vision and geo-localization data acquisition, based on project management skills
- Taught mathematical, physical, and technical concepts as tutor of the course "*Dynamics of Machinery*" (Falls 2017 and 2018)
- Guided students on their mechanical design skills through the course "*Engineering Graphical Design*" (Winters 2017 and 2018)

***Key Activities:*** Guest speaker at the course *"Engineering Design Project*" (Fall 2018), where the basis of machine vision were presented; appointed as advisor of the course for the rest of the term.

**Finite Element Analyst** – *Nov 2014 to Dec 2016*
*KATCON, Apodaca, NL, Mexico*
- Responsible of conducting Finite Element Analysis (FEA) and Acoustics simulations for automotive applications
- Demonstrated strong critical, analytical and attention to detail skills on the assessment of mechanical design of exhaust systems
- Delivered technical reports just in time including mechanical behavior, life expectancy and acoustics based on design iterations
- Highly involved in teamwork with other teams and departments such as: Project Management, Mechanical Design, Testing and Sales Representatives.
- Simulation capabilities including but not restricted to: Vibration, Thermal, Thermo-Mechanical, Harmonic Response, Fatigue, Acoustics, among many others.

***Key Activities***: Involved in 32 projects for several automotive companies. Appointed as responsible for implementing acoustics simulations in the CAE department. Attended the 2015 GT Conference at Detroit MI, USA.

**Product Engineer** – *Apr 2013 to Nov 2014*

*General Electric (GE), Apodaca, NL, Mexico*

- Leader of the engineering team of the medium voltage *Load Interrupted Switch* (LIS)
- Responsible of the electro-mechanical design and support of other departments such as: Production, Customer Service, Manufacturing, Quality to ensure each project was delivered on schedule
- Assigned to the New Product Implementation (LIS) of the product LIS with SecoVac breaker
- Developed customized CAD models, including bill of materials, manufacturing and assembly drawings
- Demonstrated high project management skills on the release of each project according to standards such as UL and NEMA

***Key Activities***: Appointed as responsible for the New Product Implementation (NPI) of LIS with SecoVac breaker. Reduced in 80% the problems in the Engineering Department related to issues in project documentation released to Manufacturing and Production, by applying Design Failure Mode and Effects Analysis (DFMEA) methodology.

**Mechanical Designer** – *Jun 2011 to Aug 2012*

*Diseño Mecánico y de Control (DIMEC), San Nicolas, NL, Mexico*

- Responsible of the mechanical design of automated machinery solutions for production lines in several field industries
- Demonstrated high analytic and creative thinking in the development of solution for reduction of lead time ang high efficiency
- Developed of CAD modeling, materials selection, manufacturing drawings, and bill of materials.
- Assessment of mechanical design by applying FEA methodologies
- Responsible of material and fixtures listing purchase according to customer standards

***Key Activities***: Studying of customer facilities for production process assessment. Involved in 11 projects for several industries including, electrical, automotive, and food industry. Project management for each project in all its stages: Development, Manufacturing, Testing, Installation and Release.