Shahab Mansoor-Baghaei

 917-435-8171  sm951ja@gmail.com [LinkedIn](http://www.linkedin.com/in/shahab951)  New York, NY

Permanent resident

**Mechanical Design Engineer**

Results-focused technical professional combining a background in structural design with PhD in Mechanical Engineering. Track record of streamlining control parameters using expertise in analyzing mass properties (weight, CG, inertia) to determine impact analysis and risk mitigation design strategies. Extensive background leading projects with cross-organizational and cross-cultural teams during design, production, and support phases. Performed multiple projects on impact analysis and car safety. ***Proven expertise in:***

|  |  |
| --- | --- |
| * + Design Concept Selection   + System Design, Stress analysis & Troubleshooting   + FE Software (Abaqus, Ansys, LS-Dyna)   + Modeling software (SOLIDWORKS, AUTOCAD &  AUTODESK 2D & 3D) | * + Programming software (Python, SQL, Mathematica)   + Testing Quality Controls & Assurance   + Compliant Drawing Preparation   + GD&T Application & Tolerance Analysis   + Design for Manufacturability & Assembly (DFMA) |

# Key accomplishment

Reduced costs by $1M/yearly and mass reduction for the assembly with the re-design of non-metal fuel filter for vehicles, leading the team in geometry, prototyping, and installation in assembly line at SGS.

# Professional Experience

**City College of New York – New York, NY**

**Industry Consultant, 2014-present**

*Provide consultation, technical suggestion and support for 10 industrial projects, mechanical designs, validations by Finite Element Analysis and implementation of industrial research. Deliver technical method and solution based on project requirements and criteria.*

* Performed structural analysis of vehicle body under impact loading with velocity of 15m/s included the specific geometry and material property to design the body structure.
* Analyzed loading condition for the gearbox of a four-wheel drive vehicle to determine stress of the gearbox shaft based on the material property and conditions of the vehicle for SAE BAJA competition.
* Force analysis of bicycle structure with maximum load in cargo career area on the inclined plane to design sprocket and the shaft

**Auto Manufacturer Group of SAIPA (SGS Co) – International/ Overseas**

**Design Engineer,** 2009 - 2012

Achieved initiatives in improving efficiency, quality, and safety by leading a team of research and quality control in design, prototyping, testing, and production activities. Allocated resources across project deliverables While working closely with vendors and complying with industry/government regulations (APQP standards of Sazeh Gostar SAIPA (SGS)).

* Decreased costs while improving quality with the discovery and implementation of a new design of driver and passenger seats for vehicle with respect to geometry, mass reduction, safer structure according to safety regulations.
* Designed braking system to boost the quality of the performance with improvements made to the parking brake for the vehicle of Pride in order to meet the standard requirements of test plans and technical drawings. Validated the design by prototyping and actual testing on the prototype installed in the vehicle.
* Analyzed the gear change mechanism of gearbox for sedan vehicle (Pride) based on historical quality problems, test plan, prototyping and model validation.
* Slashed deviations from targets by performing prototype manufacturing (Non-metal prototype with SLA method and metal prototype with soft tool for some mechanical members to issue MAN (Manufacture Authorization Notice) form.

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**Zamyad Company – International/ Overseas**

**Design Engineer, Research and Development,** 2004 - 2008

Work collaboratively on the team to design mechanical parts and mechanisms for commercial vehicles and dynamics analysis

* Specialized in the research and design of opener mechanism for engine hood of commercial transportation buses.
* Dynamics analysis of vehicles’ handling of light commercial vehicles under various driving conditions using FE model of leaf spring.
* Stress analysis and design of steering column for the commercial vehicle of NISSAN with GVW and model validation by Finite Element Method.

**Springboard**

**Experience of Python and Machine Learning in a project based curriculum, February 2022-Present**

*Work with Python, programming codes, SQL, Jupyter and datasets related to statistical analysis. Specialized in data wrangling, EDA and machine learning and its functions (Ridge, Lasso, GridSearchCV, Bayesian methods, RandomForestClassifier.....). Work on some applied projects related to Machine Learning.*

**City College of New York - New York, NY**

**Post-Doctoral Fellow,** 2012-2017

Impact analysis, Safety and Crash Research Project

* Improved safety in automobiles by conducting research on analytical investigations of head impact mechanics during automotive accidents. Identified the impact force and deformation and other important quantities. Investigate the most common injury criterion in automotive safety called HIC. Highlighted the need to transition away from current HIC formula in a proposal to suggest new equation instead to circumvent the problem of inability to predict the injury prediction under some impact loads.
* Strengthened research soundness by consulting with experts to gain an in-depth understanding of necessary content for technical presentation of data.
* Reduced the amount of non-essential material by applying rationalization to develop functionality based on stakeholder feedback.
* Ensured transparency and communication of ongoing progress by providing regular progress updates and relevant feedback to the team and advisor.

# Education

**Post-Doctoral Fellow,** Mechanical Engineering Department, The City College of New York, 2012-2017

**PhD,** Mechanical Engineering, University of Science and Technology of Iran, 2009

*Thesis: Analytical Method for Impact Investigation of the Human Head to the Flat Half Space*

**Master of Science,** Mechanical Engineering from University of Science and Technology of Iran, 2001

**Bachelor of Science,** Mechanical Engineering, Azad University of Iran, 1998

# additional history

City College of City University of New York – **Teaching Assistant,** 2012 – 2017, Energy Fanavaran (Enerfan) Company – **Design Engineer,** 1999

*\*\*\*Please reference LinkedIn for a list of publications\*\*\**