

ARUMUGAM DEIVANAYAGAM

Chennai, India.

arumd86@gmail.com

9894445105

[LinkedIn Profile](#), [Google Scholar Profile](#)



OBJECTIVE

To obtain a challenging and career-oriented position in **Blast Engineering** where I can apply my expertise in **FEA**, **computational mechanics** and **protective design** to develop resilient structures against blast and impact loading.

PROFESSIONAL PROFILE

- 12+ years of experience in Blast Assessment, Blast Resistant Design and FE Based Structural Analysis
 - 14+ years of experience in the field of Structural analysis and Structural Engineering
 - Advanced expertise in explicit simulations using ABAQUS, LS-DYNA for blast, impact, and shock scenarios
 - Strong background in structural dynamics, structural mechanics, SDOF modelling, and protective structural design.
 - Experience in **Fluid-Structure Interaction (FSI)** and **Soil-Structure Interaction (SSI)**, including CEL-based approaches for air-blast and underwater explosion (UNDEX).
 - Proven experience delivering **defence and critical infrastructure projects**, including blast door analysis, underground hardened structures, and storage facilities.
 - Strong communicator with extensive experience in **technical reporting, proposal development**, client interaction, and presentations for EPC projects.
-

EDUCATION

Ph.D. Part-time (Structures), Indian Institute of Technology Madras, India	Ongoing* (GPA:9/10)
<u>Thesis:</u> Dynamic response of structures subjected to UNDEX loading	<i>*Expected completion March 2026</i>
Master of Science (M.S), Structures & Materials, Arizona State University, USA	
<u>Thesis:</u> Probabilistic FEA and Optimization of engineering designs. FEA of fabric-based aircraft engine containment system using LS-DYNA	October-2012 (GPA: 3.78/4)
Bachelor of Engineering (B.E), Civil Engineering, Anna University, India	May-2008 (Percentage:74/100)

CORE COMPETENCIES

Programming Skills:	MATLAB C++ FORTRAN
FEA & Other tools:	ABAQUS LS-DYNA blast Foam STAAD ETABS ANSYS Hyper Mesh Auto CAD
Key Expertise:	Blast and Impact Simulation SDOF and Dynamic Analysis Blast Resistant Design FSI SSI Software Development Defense Infrastructure Design
Engineering Management:	Leading Multidisciplinary teams Project management Client Engagement and Technical Presentation
Certification/Site:	FE – Arizona, October 2011 Chartered Engineer – Institution of Engineers India

PROFESSIONAL EXPERIENCE

Senior Lead Engineering Manager (Blast Resistant Design), Larsen & Toubro, India Jan' 2025 – Present

- Lead the team for analysis and design of protective structures subjected to blast, impact, and seismic loads.
- Perform **blast assessment, SDOF analysis** and **blast design** and prepare reports and mitigation recommendations.
- Perform preliminary blast analysis and prepare proposals for upcoming defense related infra projects

- Manage **client interaction**, **third-party consultants**, and secure **technical approvals**
- Conduct **R&D activities** for development of improved blast-response modeling techniques using advanced tools
- Coordinate with design consultants, vendors and procurement team in large EPC projects.

Lead Engineering Manager (Blast Resistant Design), Larsen & Toubro, India **Jan' 2022 – Dec' 2024**

Assistant Engineering Manager (Blast Resistant Design), Larsen & Toubro, India **May 2015 – Dec' 2021**

Project: Shelter Design of Buildings (International) - (2023-2024)

Cost: USD 100+ Million

Role: Senior Lead Engineering Manager

- Blast assessment and blast simulations for multiple above ground shelters as per UFC
- Blast resistant design concept and detailed design for the building using ANSYS and ETAB and design as per ACI

Project: Aboveground Defense Projects (India) – (2016-2025)

Cost: USD 50+ Million

Role: Lead Engineering Manager

- Blast assessment and blast simulations for aboveground storage structures as per IATG, AASTP, UFC and CFEEs
- Analysis and design of aboveground storage structures for blast loadings using ANSYS and ABAQUS

Project: Underground Defense Projects (India) - (2016-2020)

Cost: USD 200+ Million

Role: Assistant Engineering Manager

- Co-ordinate, Collaborate and liaise with other discipline stake holders i.e. Design consultant, site teams and Employer for design submissions and obtained design approvals through workshops.
- Blast assessment and blast simulations for underground structures and others as per Client Requirements and UFC
- FSI numerical simulation for Air-Blast and UNDEX and design of hardened structures to blast loadings
- Detailed numerical simulations and design of multiple blast doors for blast loading using ABAQUS
- Analysis and design of mitigating structures using LS-DYNA and UG structures using ANSYS

Application Specialist, ARUP, India **Nov'2014 – March 2015**

- Technical support to the LS-DYNA users in Explicit Analysis (Blast, Impact and Contact Modeling)
- Development of training content and training to customers on Introduction to LS-DYNA

Technical Specialist, Dassault Systemes Simulia Corp., Rhode Island, USA **Jan' 2013 – Nov' 2014**

- Courses learnt as part of the training: Advanced Explicit Analysis, Element Selection, Contact and Convergence, Abaqus Topology Optimization, Composite analysis and CATIA V6 for analyst using Abaqus to name a few.
 - Advanced technical support to the Abaqus users including FEA engineering solutions for range of Static, Dynamic, Linear and Nonlinear analyses including contact problems
 - Testing of problems on convergence and accuracy for the Software development and product release
 - Performed validation for software development for FEA models on specific problems
 - Worked in Process automation software (Isight) and also involved in the advanced technical support for the same
-

- Primary responsibility includes analysis and Design of steel and concrete structures including substructures, preparation of design calculations, structural detailing and reports.
 - Preparation of design calculation, structural detailing (Auto CAD) and checking of drawings and reports by other engineers. Analysis and Design of foundation structures including Pile Foundation
-

CONFERENCE/PUBLICATION

- Deivanayagam, A. Vaidya and S.D. Rajan. (2014) “Enhancements to modeling dry fabrics for impact analysis”, Journal of Aerospace Engineering, 27(3), 484, 490. **(Journal)**
 - Arumugam D., Kaviarasu K., Alagappan P. (2025), “Experimental study on the dynamic response of steel structure subjected to blast load”, International Journal of Impact Engineering, Volume 205, 2025. **(Journal)**
 - Arumugam D, Dhana Sekaran B, Subash T.R. (2015). “Numerical analysis of missile penetration on concrete targets”, NAFEMS. **(National Conference)**
 - Arumugam D, Alagappan P. (2024). Response of Structure with Air-Backed and Water-Backed Medium Subjected to Underwater Shock Pulse. In: Chouw, N., Zhang, C. (eds) ACMSM 2023. Lecture Notes in Civil Engineering, vol 513. Springer, Singapore. **(International Conference)**
 - Arumugam D, Alagappan P. (2025). “Effect of Boundary Medium on UNDEX Shock Pulses and Bubble Dynamics”, 27th International Symposium on Military Aspects of Blast and Shock. **(International Conference)**
 - Abir. M, Arumugam.D, Dhana Sekaran.B, Subash, T.R “Numerical Simulation of Blast Wave Propagation in Layered Soil Featuring Soil-Structure Interaction”, COMPDYN (2017). **(International Conference)**
 - Sharath.R, Arumugam.D, Dhana Sekaran.B, Subash, T.R “Numerical Modeling of ‘Concrete Response’ to High Strain Rate Loadings”, LS-DYNA International European Conference (2017) **(International Conference)**
 - Maniram P, Arumugam.D, Dhana Sekaran.B, Subash, T.R “Fragment Impact on Concrete and Steel Components”, Simulia Conference India (2017). **(National Conference)**
-

COURSEWORK

Developing Software for Engineering Applications	Structural Analysis	Structural Optimization
Structural Dynamics	Earthquake Engineering	Continuum Mechanics
FEA & Advanced FEA	Elastic-Plastic Analysis	Finite Elasticity
Advanced Computational Mechanics	Advanced RCC Design	

Declaration:

I hereby declare that the information provided above is true and correct to the best of my knowledge.

Place: Chennai

Date: 08-12-2025



Arumugam Deivanayagam
