

# Shreyansh Ajmera

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Enthusiastic and results-driven structural bridge design engineer with 6 years of experience in the transport industry, specialising in the design and analysis of complex bridge structures. Passionate about structural engineering and skilled at solving both complex and repetitive challenges through innovative and efficient solutions.

Proficient in Eurocodes, with working knowledge of AASHTO LRFD. Strong interest in FE modelling and computational design, with hands-on experience using tools such as SOFiSTiK, Grasshopper, Rhino, Karamba 3D, and LUSAS to enhance workflows, improve design accuracy, and optimise structures. Committed to continuous learning, mentoring junior engineers, and integrating advanced digital methods to deliver high-quality, sustainable bridge solutions.

## Area of Expertise

Analysis and Design of Bridges, Parametric Modelling and Optimization - Computational Design

## Professional Memberships

### Institution of Civil Engineers (ICE) – Graduate Member

Currently pursuing Chartered Engineer (CEng MICE) status through the ICE.

25 out of 35 attribute levels completed; aiming to achieve chartered status in 2026.

### CITB CSCS Card

CSCS Card for Managers and Professionals valid till 2029

## Software proficiency

### Analysis platforms

SOFiSTiK, LUSAS, Karamba3D,  
Idea StatiCa, Oasys AdSec, ASBD

### Programming

Python, Grasshopper, Excel VBA,  
Mathcad

### Modelling & CAD

Rhino, AutoCAD, Solibri Office,  
Trimble Connect

## Career

Assistant Design Engineer – Ramboll India Pvt Ltd (July'19 – June'23)

Design Engineer – Major Projects, Ramboll UK (June'23 – Present)

## Key Project Experience

### Ny Ölfusárbrú, Iceland

(Sept'24-April'25)

#### Client: ÞG-Verk

Detailed design of the cable-stayed bridge abutments integrating advanced tools such as SOFiSTiK, Rhino-Grasshopper, and Excel. Extracted geometric and design data from a central SPoT (Single Point of Truth) Excel database via the Rhino-Grasshopper interface to streamline and parametrise the analytical model. Developed a parametric shell model in SOFiSTiK and completed the detailed design of the abutments. Prepared reinforcement sketches for technician input, coordinating closely with teams in India and Denmark. Collaborated with the geotechnical team to determine earth pressure coefficients under various design scenarios and to finalise soil bearing capacity. Reviewed and commented on the 3D model using Trimble Connect to ensure coordination and accuracy.

### E6-Ranheim-Sveberg, Norway

(May'25-Present)

#### Client: HÆHRE

Concept design of the K31 Vulu Bridge, a three-span integral post-tensioned slab deck bridge with a maximum span of 33 m. Developed the analytical line model in SOFiSTiK and prepared comprehensive load calculation sheets. Carried out structural analysis and finalised the preliminary cross-sections of the deck, inner and outer piers, and pier heights. Optimised the post-tensioning cable profile to ensure efficient structural behaviour. The design and analysis were performed in accordance with Manual N400 (Norwegian standard) and Eurocodes. Coordinated effectively with geotechnical engineers and technicians across different geographic locations.

**Genova Breakwater, Italy**

(Sept'23-Sept'24)

**Client: F&M ingegneria**

Detailed design of the breakwater caissons under extreme wave conditions. Developed a parametric model in SOFiSTiK for multiple caissons with varying geometries and loading scenarios. Prepared wave pressure calculation spreadsheets based on the Coastal Engineering Manual, Part VI. Coordinated with a team of technicians in India to develop detailed caisson drawings.

**E6-Ranheim-Værnes, Norway**

(July'21-Feb'23)

**Client: Acciona Construction**

Detailed design of several overbridges on the E6 highway, all designed as three-span voided deck integral bridges. Involved in concept design tasks such as determining dimensions, void arrangements, pier locations and numbers, and initial tendon profiles. Prepared load calculation sheets and grillage models in SOFiSTiK and applied them accordingly. Designed longitudinal members and piers using SOFiSTiK's in-built modules. Developed local shell models for the design of ballast and wing walls. Also completed the transverse deck design, and the design of pad foundations, pile caps, and piles using Mathcad. Created project schedules and performed self-QA checks to ensure timely, high-quality deliverables. Prepared technical reports, BoQ, Safety-in-Design documentation, and checklists, and coordinated with technicians on the 3D model for 400MMI.

**Laos Bridge, LAO PDR**

(Mar'20 -Aug'20)

**Client: Lao PDR Ministry of Information, Culture and Tourism**

Detailed design of a three-span simply supported beam-slab bridge using LUSAS and in-house Excel spreadsheets. Developed design tools for all bridge components in accordance with AASHTO standards. Coordinated with technicians to prepare drawings, assisted the principal engineer in compiling the design report, and produced the BoQ. Coordinated with client, prepared project schedules, and resolved design comments effectively.

**Technical Initiatives & Automation Projects**

In addition to project-specific tasks, I have developed advanced Grasshopper scripts to perform linear structural analysis using Karamba3D, enabling quick parametric studies within the Grasshopper environment. I also created customised interoperability tools by linking Grasshopper with LUSAS and SOFiSTiK to streamline the generation and updating of analytical models. As a design optimisation exercise, I modelled a tied-arch bridge and used the Galapagos evolutionary solver in Grasshopper to identify efficient design solutions based on multiple performance criteria.

**Professional Development & Training****LUSAS Software Training – Grillage Modelling & Vehicle Load Application****Internal training, 2022**

Delivered a structured training session to colleagues on grillage modelling and vehicular loading in LUSAS, including the use of moving load and Vehicle Load Optimisation (VLO) features. Covered practical modelling tips and demonstrated how to interpret results for bridge design applications.

**Introductory Training – SOFiSTiK and Grasshopper****Ongoing Internal Sessions**

Provided informal technical training to junior staff on getting started with SOFiSTiK and Rhino-Grasshopper workflows for parametric modelling and structural analysis, illustrating concepts with real project examples.

**Academic Qualification**

Master of Technology in Structural Dynamics from IITR, India (2017-2019)

Bachelor of Technology in Civil Engineering from UKA Tarsadia University, India (2012-2016)

**Languages Known**

English – Professional Proficiency

Hindi – Mother tongue