







# Erik Giesen Loo

## Graduate Engineer

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## Computer

-  C++
-  Python
-  MATLAB
-  LaTeX
-  Godot
-  Linux

## Languages

-  English
-  Spanish
-  Dutch
-  German
-  Japanese

## Memberships

-  Koninklijk Instituut Van Ingenieurs
-  Chi Epsilon Civil Engineering Honor Society

## Experience

- Graduate Engineer, Roughan & O'Donovan, UK.** Oct 2018 – Present
  - Analysed data for the M50 enhancing Motorway Operation Services (eMOS) project
  - Completed geotechnical design reports for the A6 Dungiven-Drumahoe Dualling Scheme
  - Performed routine maintenance & inspection of bridges in county Leinster
  - Carried out a category II check of Meenamulligan Bridge in county Donegal
- Research Assistant, Bucknell University, USA.** Summer 2015, Summer 2016
  - Researched the lateral torsional buckling stability of steel joists and crane girders
  - Performed background studies for a new 2nd-order analysis method in AISC 360-16

## Education

- Delft University of Technology, The Netherlands.** Sep 2016 – Sep 2018
  - M.Sc. Civil Engineering (Cum Laude), *grade: 8.3/10*
    - Track: Structural Engineering
    - Specialisation: Structural Mechanics
    - Thesis: *"Weak periodic boundary conditions: Effect on principal stress due to axial load under varying orientations"*
    - Additional Thesis: *"Quantifying the influence of membrane forces, curvature, and imperfections on the nonlinear buckling load of thin-shells"*
- Bucknell University, USA.** Aug 2012 – May 2016
  - B.Sc. Civil Engineering (Magna Cum Laude), *GPA: 3.8/4.0*
    - Thesis: *"Design of Steel Structures by Advanced 2nd-Order Elastic Analysis - Background Studies"*

## Certificates

- Introduction to Machine Learning, Duke University.** May 2021
  - Logistic Regression, Multilayer Perceptron
  - Convolutional Neural Networks
  - Recurrent Neural Networks, Long-Term Short Memory
- Algorithms Specialisation, Stanford University.** Apr 2021
  - Divide and Conquer, Sorting and Searching, and Randomized Algorithms
  - Graph Search, Shortest Paths, and Data Structures
  - Greedy Algorithms, Minimum Spanning Trees, and Dynamic Programming
  - Shortest Paths Revisited, NP-Complete Problems and What To Do About Them
- Accelerated Computer Science Fundamentals, University of Illinois at Urbana-Champaign.** Sep 2020
  - Object-Oriented Data Structures in C++
  - Ordered Data Structures
  - Unordered Data Structures
- CPD Professional Engineering, Technological University Dublin.** Jun 2019
- Programming in JIVE, Dynaflo Research Group.** Jun 2018

## Publications

Giesen Loo E, van der Meer FP. Stress-controlled weakly periodic boundary conditions: Axial stress under varying orientations. *Int J Numer Methods Eng.* 2020;1–13. <https://doi.org/10.1002/nme.6441>

## Projects

- Fourgotten, GMTK Game Jam.** June 2021
  - Worked collaboratively with a team to develop a game in 48 hours
  - Game homepage: <https://sugarcandy.itch.io/fourgotten>
  - Game sourcecode: <https://github.com/Archeologists/GMTK-GJ-21>