

Europass Curriculum Vitae

Personal information

Name / Surname

Address

Telephone

Personal Email

Nationality

Date of birth

Gender

Mother tongue

*Self-assessment
European level^(*)*

English

Latin

Education and Training

2010 – 2017

Ph.D.in Middle East Technical University Civil Engineering Department. Dissertation:

On-Line Web-Based Structural Evaluation Program Development for Existing Reinforced Concrete Buildings Against Earthquakes

2006 – 2010

M.Sc. in Middle East Technical University Civil Engineering Department. Dissertation:

Determination of Axial Loads in Bridge Cables and Damage Identification in Bridge Girders

2010

Microsoft Certified Professional Developer (MCPD)

2009 – 2010

Bilge Adam Certification Programme on Programming Concepts and Database Systems

Yücel, Mustafa Can

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m.can.yucel.1@gmail.com

Turkish

October 29, 1983

Male

Turkish

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C2 Proficient user	C2 Proficient user	C2 Proficient user	C2 Proficient user	C2 Proficient user
A1 Basic user	A1 Basic user	A1 Basic user	A1 Basic user	A1 Basic user

^(*) Common European Framework of Reference (CEF) level



2002 – 2006	B.Sc. in Middle East Technical University Civil Engineering Department
Experience	
2019 – Present	<p>BridgeWIZ Engineering Construction Software Corporation</p> <ul style="list-style-type: none"> – <i>Structural engineering</i> – <i>Software development</i> – <i>Research & Development</i>
2015 – 2019	<p>Yapıdestek Engineering, Software Ltd. Co</p> <ul style="list-style-type: none"> – <i>General management</i> – <i>PC and mobile software development</i> – <i>Structural engineering</i>
2013 – Present	Turkish Association for Bridge and Structural Engineering ¹ <i>Administrative Board Member</i>
2013 – 2015	Freelance Software Developer
2006 – 2013	<p>Research and Teaching Assistant in Middle East Technical University</p> <p>Assisted Courses:</p> <ul style="list-style-type: none"> – Fundamentals of Steel Design – Structural Analysis – Civil Engineering Design

¹Non-profit organization and Turkish Representative of International Association of Bridge and Structural Engineering (IABSE)

Structural Engineering Skills

Civil Engineering¹

- Highway and railroad infrastructures (***)
- Reinforced concrete design (**)
- Steel design (**)
- Structural reliability (*)
- Structural optimization (*)

Earthquake Engineering¹

- Seismic analysis (***)
- Engineering seismology (*)
- Condition and vulnerability assessment (**)
- Performance based design (**)
- Seismic base isolation system analysis and design (*)

Structural Modeling¹

- Finite element model generation and structural analysis (***)
- Numerical analysis

Structural Health Monitoring (SHM)¹

- Design and implementation of SHM systems (***)

Software Development Skills

Proficient Languages²

- C# (***)
- Java (***)
- Kotlin (***)
- Javascript (***)
- HTML & CSS (***)
- Visual Basic (***)
- MatLab/Octave (***)
- L^AT_EX (***)
- Python (***)
- Swift (**)
- C++ (**)
- Processing (**)
- SQL (*)
- Objective-C (*)
- PHP (*)

Proficient Frameworks Web Development²

- Vue-JS (***)
- OpenCV (***)
- Firebase (***)
- Svelte (**)
- Microsoft Identity (*)
- Microsoft Entity Framework (*)

²(***) : Proficient (**) : Intermediate (*) : Beginner

Proficient Frameworks
Desktop Development²

- .NET (***)
- WPF MVVM (***)
- MatLab (***)
- Java (**)

Proficient Frameworks
Mobile Development²

- Android (Native development with Kotlin) (***)
- iOS (Native Development with Swift) (**)
- Cross-Platform Development with MAUI and C# (**)

Proficient Frameworks
Database Systems and Data
Access Layer²

- T-SQL and MSSQL Server (***)
- Entity Framework (***)
- Firebase Firestore (***)
- MySQL (*)

Proficient Frameworks
Collaboration and Version
Control²

- Git (***)
- SVN (*)

Machine Learning

- Tensorflow (**)
- PyTorch (**)
- Convolutional Neural Networks (**)
- Artificial Neural Networks (**)
- Recurrent Neural Networks (*)

Image Processing Skills

- OpenCV (***)
- Color spaces and conversions (***)
- Transformations and filters (***)
- Segmentation and feature extraction (***)
- Object detection and blob analysis (**)
- Morphological operations (**)
- Pattern recognition (**)

Projects & Portfolio

2022	<p><i>Determining Tree Diameters From Mobile Device Camera</i></p> <p>An Android application that uses machine learning (YOLO) and a set of image processing tools to measure the diameters of standing and cut trees in pinpoint accuracy. The project includes a set of programming languages and tools such as Kotlin, Java, C++, Python, Tensorflow, OpenCV.</p>
2021	<p><i>Bridge Calculators</i></p> <p>Bridge Calculators are a set of online tools that are developed for helping civil engineers on various topics. These topics mainly focus on bridge design, however, diverse tools on signal processing and structural analyses also exist. The service is developed using Vue.js as front end, NodeJS as back end, and is deployed on Amazon Web Services Elastic Beanstalk (incorporating a set of AWS tools).</p>
2020	<p><i>Bridge Designer</i></p> <p>Bridge Designer for I Beams software is developed for filling the following needs: performing preliminary design and cost estimation with minimum amount of data. It can perform basic pretension I-Beam design (with several assumptions) according to different design specifications (AASHTO, Eurocode, Turkish Bridge Design Guidelines for highway bridges; AREMA and Eurocode for railway bridge) and serve users a report that will help with their work. It is developed with C# for Windows OS, fully complying to MVVM architecture and implementing a handful of software development patterns.</p>
2017	<p><i>Structural health Monitoring System Online Dashboards</i></p>

	<p>I have developed and published various HTML+CSS and JS based online dashboard applications for the ongoing monitoring projects. The dashboards include authorization and authentication components as well as a selection of high performance charts that display more than 100,000 data points, with the help of 3rd party charting frameworks. These dashboard systems also include the data transfer layers between the proprietary monitoring equipment software and dashboard data structures, in addition to alarm components that send e-mail and SMS warnings when predetermined thresholds are exceeded in the specified measurement channels.</p>
2016	<p><i>Online Seismic Risk Assessment Service for Residential Buildings</i></p> <p>I have developed and published a website where people can register and analyze their buildings according to several cursory and preliminary methods suggested in Turkish and US specifications. The inputs have been simplified and served with several photos as an example so that people with little no expertise on the subject can use the system as well. After the analyses, a final report was prepared automatically which includes an informative section for increasing public awareness on seismic resistant design principles, and another section on the effects of parameters that they have given. The system was developed using ASP.NET MVC5 framework and was published on Azure Cloud Services over a secure connection.</p>
2016	<p><i>Micro Control Unit Programming for Wireless Data Transfer</i></p> <p>I have written the main code for different micro controller units (ESP8266-based Sparkfun and Adafruit MCU) using C++ for reading/converting analog inputs to digital, storing the measurements on the SD card, and uploading the records to a remote server via Wi-Fi over HTTP protocols at every defined interval. The code included deep sleep cycles for maximized energy efficiency.</p>
2017	<p><i>PeriodFinder:</i></p> <p>An Android app for determining the fundamental period of your building by measuring the acceleration values of a predefined time, and processing the recorded signal using Fourier transforms in conjunction with cross-correlation algorithms and modal assurance criterion technique. The app is available as closed beta in the Play Store.</p>
2017	<p><i>GES Risk Analizi:</i></p>

A native Android app for determining the risk level of simpler solar panel systems, based on their structural and static integrity, as well as several other risk factors. The app is designed for user input only, the analysis are to be performed on a remote server which uses ASP.NET. The server is also responsible from generating a resultant report of PDF, and sending it back to the client Android app. Currently almost completed, the app development is paused.

2016

Online Seismic Risk Assessment System:

Developed as a part of a KOSGEB project, the web application helps the people with no technical knowledge to assess the risk levels of their building against earthquakes. The application uses several frameworks such as ASP.NET MVC, Entity Framework, Identity, AngularJS, Bootstrap, PaperJS and generates a PDF report of the structure which also gives limited technical knowledge, to increase the awareness and sensitivity in earthquake resistant design practices.

2011 – 2016

Improving the Design and Construction Technologies in Turkish Bridge Engineering:

A large scale TUBITAK project done in collaboration with KGM and several other universities, it gave me the opportunity to contribute both as a structural engineer and software developer. I have assisted the seismic assessment sections as a civil engineer. Being a large project with many contributors, document management was an issue, therefore I designed and implemented the software management system (an ASP.NET solution with SQL database). Moreover, I have designed two applications as the final products of the study; one an earthquake design spectrum generator and second a helper app for determining the most suitable bridge type alternatives with their costs to a given valley profile.

2011 – 2015

Developing an Inspection Framework and Software for Inspection of Railroad Bridges:

A project done in collaboration with Turkish State Railways (TCDD), their existing inspection system is renovated and a new PC software with a centralized database is created for the newly updated inspection system. I contributed as a structural engineer and developed the software with data access and storage components. The software is distributed within TCDD and I have offered training sessions to regional representatives from all regions of Turkey on how to use the application. The software is later revised and improved based on the suggestions and requests collected from the people using it around Turkey.

2013

iDesignSpectra:

- An iOS application for drawing the design spectrum graphs based on different codes (AASHTO2007, AASHTO2012) and user-defined custom parameters. Resultant charts and data can be shared using e-mail or other upload choice of the user. Currently unavailable in the iOS application store, but can be delivered upon request.
- 2013 *iBridgeInspector:*
An iOS app for inspection of bridges (highway and rail-road of different types) which is capable of handling attached photos (unlimited in number), audio recordings, and creating PDF reports that can be sent as e-mails or uploaded directly to Dropbox. Currently unavailable in the iOS application store, but can be delivered upon request.
- 2013 *RGB2CMYK Color Converter:*
A Windows WPF application for converting images in RGB color space to CMYK. The application has the capability to batch convert and preview the results.
- 2013 *vCardSaver:*
A Windows Winforms application for reading a list of contacts from an Excel file (currently .xls only), and then saving them as vCard 2.1. The user can select the sheet as well as name and e-mail columns from dropdown menus. The connection to Excel is established by OleDb. The output could be a single vcf file that contains all the contacts, or separate files for each contact.
- 2011 *Road Extraction from Satellite Imagery:*
A course project implemented via Mat-Lab for extracting the road data from satellite images. The process used a combination sequence of filters, binary conversion, bump-mapping, morphological operations and pattern recognition. The success rate of the program was 86%.

Publications

- Mustafa Can Yücel Dilara Akdoğanbulut Melike Çınar Alp Caner, Fatma Gültekin. Machine-learning based mobile app for determining corrosion presence using images. In *International Bridge Conference 2021*, 2021
- Alp Caner Mustafa Can Yücel, Dilara Akdoğanbulut. Development of a software for design and design comparison of prestressed i-beam for highway and railway bridges based on international standards. In *International Conference on Civil Infrastructure and Construction (CIC 2020)*, 2020

- Mustafa Can Yücel. *An Online Earthquake Evaluation Software For R/C Buildings: Web-based Structural Evaluation Program Development For Existing Reinforced Concrete Buildings Against Earthquakes*. Lambert Academic Publishing, 2020
- M. C. Yücel. *On-Line Web-Based Structural Evaluation Program Development for Existing Reinforced Concrete Buildings Against Earthquakes*. PhD thesis, Middle East Technical University, 2017
- Mustafa Can Yücel and Alp Caner. Demiryolu köprülerinin muayenesinde uluslararası uygulamalar ve türkiye için muayene Önerileri. In *İstanbul Uluslararası Köprü Konferansı*, 2014
- M. C. Yücel, A. Caner, and Ahmet Türer. Time-efficient visual inspection of zonguldak-irmak railroad bridges. In *7 th International Conference on Bridge Maintenance, Safety and Management, China*, 2014
- Alp Yücel, Mustafa Can; Caner. International applications in inspection of railroad bridges and recommendations for turkish practice. *Istanbul International Bridge Conference 2014 Proceedings*, 2014
- M. C. Yücel. *Structural Damage Detection by NDT and Finding Axial Loads in Cables*. LAP Lambert Academic Publishing, 2011
- M. C. Yücel and A. Türer. Kiriş tipi yapılarda hasarsız durum tespiti. In *IV. Ulusal Çelik Yapılar Konferansı; İstanbul*, 2011
- M. C. Yücel. Determination of axial loads in bridge cables and damage identification in bridge girders. Master's thesis, Middle East Technical University, 2010

Honors and Awards

2012

Extraordinary Success In Education as Research Assistant
Issued by: Middle East Technical University

2006 – 2009

TUBITAK Scholarship

2002 – 2006

Honor and High Honor Rolls in Undergraduate

Miscellaneous

Hobbies

Computer games (Mainly role-playing and city building)
Electric Guitar (Lead guitarist in a classical rock band for 6 years)
Piano (Beginner)

Additional Contact Info

E-Mail

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Twitter	@msoulforged
GitHub	mcanyucel
Bitbucket	mcyucel
StackOverflow	mcy
CodeProject	mcy