

# ADEM CANDAS

Ph.D., Mechanical Engineering  
Lecturer, Faculty of Mechanical Engineering  
Istanbul Technical University  
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2022 - 2023 Oct. Post-Doctoral Researcher:  
[a.candas@strath.ac.uk](mailto:a.candas@strath.ac.uk) | [peridynamics.org/team](http://peridynamics.org/team)

Orchid: [orcid.org/0000-0002-9951-9122](http://orcid.org/0000-0002-9951-9122)  
Web of Science: [webofscience.com/wos/author/record/791371](http://webofscience.com/wos/author/record/791371)  
Scopus: [scopus.com/authid/detail.uri?authorId=48161045600](http://scopus.com/authid/detail.uri?authorId=48161045600)

## EDUCATION & EXPERIENCES

**Oct. 2022  
(12 months)**

**Post-Doctoral Researcher**  
Peridynamic Research Centre  
University of Strathclyde, Glasgow, United Kingdom.  
Advisor: Prof. Dr. Erkan Öterkuş

### Project:

- The Scientific and Technological Research Council of Turkey (TÜBİTAK) 2219 International Postdoctoral Research Fellowship Grant, Project No: 1059B192100891
- Modelling and Analysis of Fracture Behaviours of Functionally Graded Materials Under Impact Load using Peridynamics

**Mar. 2021**

**Ph.D., Mechanical Engineering**  
Graduate School  
Istanbul Technical University, İstanbul, Turkey. (3.03/4.00)  
Advisor: Prof. C. Erdem İmrak

### Published Thesis:

Constitutive Failure Modelling and Analysis of Steel Wire Rope Structures Subjected to Impact Loading  
[web.itu.edu.tr/candas/documents/thesis\\_2021mech\\_phd.pdf](http://web.itu.edu.tr/candas/documents/thesis_2021mech_phd.pdf)  
[web.itu.edu.tr/candas/documents/presentation\\_2021mech\\_phd.pdf](http://web.itu.edu.tr/candas/documents/presentation_2021mech_phd.pdf)

### Relevant Coursework, Projects, and Extras:

- Kalthoff-Winkler Experiment Modelling with Micro-cracks
- Wire-rope Modelling and Analysis Under Impact Load
- Vibration, Sound and Acceleration Tests of Elevators
- Data Acquisition and Signal Processing
- Elevator and Escalator Design, Test, and Analysis

**Oct. 2017  
(3 months)**

**Visiting Researcher**  
Naval Architecture, Ocean and Marine Engineering  
University of Strathclyde, Glasgow, United Kingdom.  
Advisor: Prof. Erkan Öterkuş

- Peridynamic Modeling of Impact Loading on Brittle Materials
- Peridynamic Differential Operator

**Jun. 2017**

**M.Sc. Geodynamics**  
Eurasia Institute of Earth Sciences  
Istanbul Technical University, İstanbul, Turkey. (3.81/4.00)  
Advisor: Prof. Mehmet Akif Sarıkaya

**Published Thesis:**

Reconstruction of the Paleoclimate on Dedegöl Mountain with Paleoglacial Records and Numerical Ice Flow Models

[web.itu.edu.tr/candas/documents/thesis\\_2017eies\\_msc.pdf](http://web.itu.edu.tr/candas/documents/thesis_2017eies_msc.pdf)

[web.itu.edu.tr/candas/documents/presentation\\_2017eies\\_msc.pdf](http://web.itu.edu.tr/candas/documents/presentation_2017eies_msc.pdf)

**Relevant Coursework, Projects, and Extras:**

- Paleoclimate and Paleoglacier Modelling using PISM
- TÜBİTAK 1001 Project - Paleoclimate Reconstruction of Dedegöl Mountain (Turkey), Researcher (114Y548)
- 2 Field Studies and Collecting Rock Samples for Cosmogenic Dating

**Jan. 2013**

**M.Sc. Mechanical Design**

Graduate School of Science Engineering and Technology

Istanbul Technical University, Istanbul, Turkey. (3.33/4.00)

Advisor: Assoc. Prof. Serpil Kurt

**Published Thesis:** Experimental Stress Analysis of a Jib Crane

(Bir Jib Krenin Deneyisel Gerilme Analizi, in Turkish)

[web.itu.edu.tr/candas/documents/thesis\\_2013mech\\_msc.pdf](http://web.itu.edu.tr/candas/documents/thesis_2013mech_msc.pdf)

[web.itu.edu.tr/candas/documents/presentation\\_2013mech\\_msc.pdf](http://web.itu.edu.tr/candas/documents/presentation_2013mech_msc.pdf)

**Relevant Coursework, Projects, and Extras:**

- ITU BAP Project: 35041
- Strain Gage Applications & Data Acquisition, Analysis & Reporting
- Elevator Safety Gear Test System Experiment
- Offshore Petroleum Platform Jib Crane Safety Tests in Caspian Sea
- Advanced Computer Aided Design
- Generating CAD Codes in MATLAB
- Finite Element Analysis

**Jun. 2013**

**B.Sc. Public Administration**

Open University

Anadolu University, Eskisehir, Turkey.

**Relevant Coursework, Projects, and Extras:**

- Knowledge on current social problems
- Experience in Sociology, Law, History, and Philosophy

**Jun. 2010**

**B.Sc. Mechanical Engineering**

Faculty of Mechanical Engineering

Istanbul Technical University, Istanbul, Turkey. (2.60/4.00)

Advisor: İ. Bedii Özdemir

**Published Thesis:** CFD Analysis of an Axial Fan

[web.itu.edu.tr/candas/documents/thesis\\_2010mech\\_bsc.pdf](http://web.itu.edu.tr/candas/documents/thesis_2010mech_bsc.pdf)

[web.itu.edu.tr/candas/documents/poster\\_2010mech\\_bsc.pdf](http://web.itu.edu.tr/candas/documents/poster_2010mech_bsc.pdf)

**Relevant Coursework, Projects, and Extras:**

- Computer Aided Technical Drawing, Machine Design
- Engineering Applications for MATLAB
- Materials & Strength of Materials
- Differential Equations, Numerical Methods
- Measurement Systems

**Jun. 2006**

**School of Foreign Languages**

Istanbul Technical University, Istanbul, Turkey

**Relevant Coursework:**

- English

Jun. 2005

**High School Degree**

Süleyman Demirel Scientific High School  
Isparta, Turkey. (4.85/5.00)

## SKILLS AND LANGUAGES

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**Programming**

Python: Basic Knowledge

**Languages**

Fortran: Basic Knowledge

HTML: Basic Knowledge

**Software**

MATLAB: Expert User

- Parallel Ice Sheet Model, Input file generator
- Surface Mass Balance calculator
- Data Acq. - strain / stress transformation and calculation
- Spline Tower (Rotating, Scaling, and Offset Transformations - Spline and Surface Output)

SolidWorks & AutoCAD: Expert User

- Working on Laboratory Hours of Computer Aided Technical Drawing Lessons for 10 years
- Familiar with other CAD programs: Fusion 360, Catia, Onshape,

MS Office: Expert User

- Word, Power Point, Excel

Abaqus: Advanced

- Various Mechanical Parts and Systems Strain-Stress Analysis

Ansys CFD: Advanced

- Used in B.Sc. Thesis: CFD Analysis of an Axial Fan

Parallel Ice Sheet Model (PISM): Advanced

- Paleoclimate Glacier Modelling

Mendeley for reference management

Windows, Ubuntu and Mac OS

**Hardware**

Accelerometers, Strain-gages, Data Acquisition Devices: Experienced User

**Languages**

Turkish: Native

English: Fluent, spoken and written (YDS: 91.25, Mar. 2018)

## WORK EXPERIENCE

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2018 - ...

**Lecturer**

Mechanical Engineering Faculty  
Istanbul Technical University, Istanbul, Turkey.

**Material Handling Group**

[transport.itu.edu.tr/candas](http://transport.itu.edu.tr/candas)

**Courses Taught:**

- Introduction to Machine Design (Undergraduate Level)
- Linear Algebra and It's Applications (Undergraduate Level)
- Engineering Mathematics (Undergraduate Level)
- Computer Aided Technical Drawing (Undergraduate Level)
- Technical Drawing (Undergraduate Level)
- Vertical Transportation Systems (Graduate Level, Assistance)

**2010-2018**

**Research Assistant**

Mechanical Engineering Faculty  
Istanbul Technical University, Istanbul, Turkey.

**Courses Experience:**

- Introduction to Machine Design (Undergraduate Level)
- Technical Drawing (Undergraduate Level)
- Computer Aided Technical Drawing (Undergraduate Level)
- Introduction to Computer Aided Engineering (Graduate Level)
- Advanced Transportation Systems (Graduate Level)

**Feb. 2009  
(5 months)**

**Part Time Intern Engineer**

TOFAŞ, Türk Otomobil Fabrikaları

(Automobile Manufacture Company), Bursa, Turkey

- Press Metal and Maintenance Division
- Determination of Lifespan and Maintenance Cycle of Certain Spare Parts

**2005-2010**

**Part Time Assistant Student, Computer Laboratory**

Mechanical Engineering Faculty  
Istanbul Technical University, Istanbul, Turkey.

- Maintenance and Repair of Computers

## CONGRESS & SYMPOSIUMS

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**Mar. 2021**

Noise Measurement in Elevators, Presentation  
2nd International Conference on Access to Recent Advances in Engineering and Digitalization (ARACONF, 2021), ISBN x, 10-12 March, Kayseri, Turkey.

**May. 2018**

Reconstruction of the Paleoglaciers with PISM (Parallel Ice Sheet Model): A Case Study on Dedegöl Mountain, Presentation.  
TURQUA 2018 (Turkey Quaternary Symposium), Istanbul, Turkey.

**Apr. 2017**

A New Attempt of 2-D Numerical Ice Flow Model to Reconstruct Paleoclimate from Mountain Glaciers, Poster.  
EGU 2017 (European Geosciences Union General Assembly), Vienna, Austria.

**May. 2016**

Two Dimensional Numerical Ice Flow Modelling: A New Approach to Reconstruct the Paleoclimate from Glacial Records, Poster.  
TURQUA 2016 (Turkey Quaternary Symposium), Istanbul, Turkey.

**Jul. 2014**

Determination of Loads Acting on Guide Rail Fixing Under Certain Loading Condition, Poster.  
Elevcon 2014, Paris, France.

**Jul. 2013**

FEM and Experimental Stress analysis of a Jib Crane, Presentation.  
The 3rd International Conference on Advanced Design and Manufacturing Engineering (ADME 2013), Anshan, China.

**May. 2012**

Modelling and Analysis of Guide Rail Brackets and Attaching Parts, Presentation.  
Elevcon 2012, Miami, USA.

**Sep. 2011**

Computer Aided Valve Design of Shock Absorbers Used in Vehicles, Presentation.  
Advanced Design and Manufacture IV 2011, Kunming, China.

## EXTRA-CURRICULAR ACTIVITIES

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2017-...

### Member of the Board Trustees

The Hope Foundation for Children with Cancer  
Kanserli Çocuklara Umut Vakfı, KAÇUV.  
[www.kacuv.org/en/](http://www.kacuv.org/en/)

### Scholarship Committee Member 2020 - ...

- Advising the Board of Directors of the KAÇUV on the awarding of scholarships.

### Board of Directors 2021 - ...

### What We Do?

As the Hope Foundation for Children with Cancer, creating an optimal environment for treatment, which is an important requirement when fighting with cancer, and ensuring the sustainability of the treatment are among our main goals. (from [kacuv.org/en](http://kacuv.org/en))

2006-2008

### Active Member of the Volunteer Club in İTÜ

Community Volunteers Foundation  
(Toplum Gönüllüleri Vakfı)  
[www.tog.org.tr/en](http://www.tog.org.tr/en)

### Founder and leader for 2 years of White Hats Project:

- Six National Universities' Volunteer Organizations

## AWARDS

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Ranked in the top 2,000 in the National Science High School entrance examination among 1.5 million students in Turkey.

Ranked in the top 2% in the National University Entrance Examination among 1.5 million students in Turkey

## RECENT PUBLICATIONS

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Please visit [web.itu.edu.tr/candas/publications.html](http://web.itu.edu.tr/candas/publications.html) for the up-to-date list, papers, and presentations.

[8]

Hacıoğlu, A., **Candaş, A.**, Baykara, C., 2022. Large Deflections of Functionally Graded Non-linearly Elastic Cantilever Beams. Journal of Engineering Materials and Technology, Transactions of ASME. (*Article in press*).  
[doi.org/10.1115/1.4056034](https://doi.org/10.1115/1.4056034)

[7]

Şahin, T., İmrak, C.E., Çakır, A., **Candaş, A.**, 2022. Evolved model for early fault detection and health tracking in marine diesel engine by means of machine learning techniques. Pomorstvo, 36 (1), 95-104.  
[doi.org/10.31217/p.36.1.11](https://doi.org/10.31217/p.36.1.11)

[6]

Köse O., Sarıkaya, M.A., Çiner, A., **Candaş, A.**, Yıldırım, C., Wilcken, K.M., 2022. Reconstruction of Last Glacial Maximum glaciers and palaeoclimate in the Central Taurus Range, Mt. Karanfil, of the Eastern Mediterranean. Quaternary Science Reviews, 291:107656.  
[doi.org/10.1016/j.quascirev.2022.107656](https://doi.org/10.1016/j.quascirev.2022.107656)

[5]

**Candaş, A.**, Oterkus, E., İmrak, C.E., 2021. Peridynamic simulation of dynamic fracture in functionally graded materials subjected to impact load. Engineering with Computers.  
[doi.org/10.1007/s00366-021-01540-2](https://doi.org/10.1007/s00366-021-01540-2)

- [4] Žebre M., Sarıkaya M.A., Stepišnik U., Colucci R.R., Yıldırım C., Çiner A., **Candaş, A.**, Vlahović I., Tomljenović B., Matoš B., Wilcken K.M., 2021. An early glacial maximum during the last glacial cycle on the northern Velebit Mt. (Croatia). *Geomorphology*, 392:107918.  
[doi.org/10.1016/j.geomorph.2021.107918](https://doi.org/10.1016/j.geomorph.2021.107918)
- [3] **Candaş, A.**, Oterkus, E., İmrak, C.E., 2021. Dynamic Crack Propagation and Its Interaction with Micro-Cracks in an Impact Problem. *Journal of Engineering Materials and Technology*, Transactions of ASME, 143(1).  
[doi.org/10.1115/1.4047746](https://doi.org/10.1115/1.4047746)
- [2] **Candaş, A.**, Sarıkaya, M.A., Köse, O., Şen, Ö.L. Çiner, A., 2020. Modelling Last Glacial Maximum ice cap with Parallel Ice Sheet Model to infer palaeoclimate in south-west Turkey. *Journal of Quaternary Science*, 35(7): 935-950.  
[doi.org/10.1002/jqs.3239](https://doi.org/10.1002/jqs.3239)
- [1] Köse, O., Sarıkaya, M.A., Çiner, A., **Candaş, A.**, 2019. Late Quaternary Glaciations and Cosmogenic <sup>36</sup>Cl Geochronology of Mount Dedegöl, South-West Turkey. *Journal of Quaternary Science*, 34(1), 51-63.  
[doi.org/10.1002/jqs.3080](https://doi.org/10.1002/jqs.3080)

## RECENT TR-DİZİN PAPERS

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Please visit [web.itu.edu.tr/candas/publications.html](http://web.itu.edu.tr/candas/publications.html) for the up-to-date list, papers, and presentations.

- [2] **Candaş, A.**, Sancak, A., İmrak, C.E., 2021. Asansör Sistemlerinde Gürültü Ölçümü. *Avrupa Bilim ve Teknoloji Dergisi*, 24, 75-80.
- [1] Sancak, A., **Candaş, A.**, İmrak, C.E., 2021. Asansör Kabin Kılavuz Ray Konsol Tasarımlarının Deprem Yüğü Altında Analizi ve Karşılaştırılması. *Avrupa Bilim ve Teknoloji Dergisi*, 24, 60-66.