

SELAY TEKĞÜL

Computational Geometry • Digital Geometry Processing • Applied Mathematics

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RESEARCH PROFILE

Research and Teaching Assistant at METU working on computational geometry and digital geometry processing. Current research develops Bézier spline curves on triangulated surfaces using geodesic constructions, continuity constraints, curvature descriptors, and differentiable optimization. Interested in surface-curve optimization for geometric design and manufacturing.

EDUCATION

Middle East Technical University (METU) | Ankara, Türkiye

Incoming Ph.D. student in Applied Mathematics, expected Fall 2026

M.Sc. candidate in Computer Engineering; cumulative GPA: 3.93/4.00; thesis in digital geometry processing

TED University | Ankara, Türkiye

B.Eng. in Computer Engineering; cumulative GPA: 3.73/4.00

Secondary field in Business Administration; coursework GPA: 4.00/4.00

Grade scale: 4.00 maximum. See the official bilingual [TED University transcript](#) for the complete scale.

RESEARCH

Research and Teaching Assistant — METU Computer Engineering | 2023–Present

Research in digital geometry processing, computer graphics, computational geometry, and computer vision.

Courses assisted: CENG 111 Introduction to Computer Engineering Concepts; CENG 140 C Programming; CENG 240 Programming with Python for Engineers; CENG 350 Software Engineering; CENG 492 Computer Engineering Design II.

M.Sc. Thesis — Curves on Surfaces | C++23 framework

Cubic Bézier splines on triangulated surfaces; geodesic and Euclidean construction strategies; G1/C1 tangent constraints; curvature-driven automatic curve generation; multi-curve/control-point untangling with differentiable energies; mesh cutting, reproducible experiments, and automated tests.

EXPERIENCE

Software Engineer — Simsoft Computer Technologies | Sep 2021–Nov 2023

Worked on simulation software development in C++.

Engineer Intern — GEFEASOFT | Jun 2021–Aug 2021 • Remote

Worked on 3D design and modeling for healthcare systems using Blender.

PUBLICATION

S. Tekgöl and G. N. Yılmaz | JAIDA 1(2), 125–135, 2021

“Snake Detection and Blurring System to Prevent Unexpected Appearance of Snake Images on Visual Media Sources Using Deep Learning.”

This publication originated from my undergraduate course project for Introduction to Computer Vision.

TECHNICAL STRENGTHS

Geometry and mathematics: geodesic paths, Bézier curves and splines, discrete differential geometry, curvature descriptors, continuity constraints

Software and experimentation: C++23, Python, CMake, Eigen, Geometry Central, TinyAD, Polyscope, OpenCV, GoogleTest, Git