

# NICHOLAS SIMIC

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<https://nicsimic.github.io/>

## RESEARCH INTERESTS

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Computer Vision, Machine Learning, Optimization, 3D Pose and Motion Estimation, Digital Humans.

## SELECTED MASTER PROJECTS

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### 3D Face Estimation from a Monocular RGB Image with Dense Landmarks (Thesis)

3D face reconstruction with regression-based dense landmark prediction and parametric model fitting. Implemented in PyTorch, Lightning.

### Face Modeling and Learning (Shape Modeling and Geometry Processing)

Face landmarks selection, face alignment, PCA of faces, face space learning using GCNs. Implemented in Python and PyTorch.

### Road Segmentation (Computational Intelligence Lab)

Segmentation of aerial images of roads approached using an ensemble of pre-trained Unet architectures and compared with a GAN model. Implemented using PyTorch.

## SELECTED MASTER COURSES

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Computer Vision	<i>Sep-Dec 2020</i>
Computer Graphics	<i>Sep-Dec 2020</i>
Shape Modeling and Geometry Processing	<i>Feb-Jun 2021</i>
Computational Models of Motion	<i>Feb-Jun 2021</i>
Probabilistic Artificial Intelligence	<i>Sep-Dec 2021</i>
Computational Intelligence Lab	<i>Sep-Dec 2021</i>
Seminar In Advanced Topics in Computer Vision and Graphics	<i>Sep-Dec 2021</i>

## ACADEMIC EDUCATION

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<b>Swiss Federal Institute of Technology in Zürich (ETHZ)</b>	<i>2019-2022</i>
MSc in Computer Science	
<b>Swiss Federal Institute of Technology in Lausanne (EPFL)</b>	<i>2016-2019</i>
BSc in Communication Systems	
<i>Bachelor Project: Study Of The Square Form Factorization Algorithm (SQUFOF)</i>	

## SKILLS

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**Programming:** Python, C/C++, Java, Scala, MatLab

**Libraries:** Numpy, Scipy, Theseus

**Deep Learning Frameworks:** PyTorch, Lightning

## LANGUAGES

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Italian (Maternal), English (Fluent), French (Elementary), German (Elementary)

## REFERENCES

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<b>Dr. Gurkirt Singh</b>	ETH Zurich
<b>Dr. Vasileios Choutas</b>	ETH Zurich, Max Plank Institute Tübingen